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THE MEASUREMENT OF LABOR MOBILITY

I

The flow of industrial workers into and out of our factories, mills, mines, and lumber camps, and their migration from one camp or factory to another are phenomena so varied and complex that it is impossible adequately to discuss them by the loose manipulation of the word "turnover," with its limited scope and ambiguous connotation. It is no less hopeless to try to measure the extent of this labor flow by means of such a narrow and misleading formula as the so-called "percentage of labor turnover," now so commonly resorted to.

The term "labor turnover," if confusion is to be avoided, should either be discontinued or else used very definitely and specifically in reference to some one phase of labor mobility. It would be useful when used in the strict sense either of labor replacement or of labor flux (accessions plus separations). But labor replacement and labor flux, although of primary importance, do not cover the whole problem of labor mobility. There are also to be considered "labor increase" (in concerns which are enlarging their normal work force) and "labor decrease" (in concerns which are cutting down their normal work force). Neither labor increase nor decrease is a part of the so-called "turnover" when that term is defined as replacement, whereas both are a part of it when it is defined as flux. This

means that neither employees hired by an expanding concern to increase the normal work force nor old employees laid off by a dwindling business to decrease it—or employees whose voluntary resignations the employer avails himself of with the same object—figure in the labor replacement.

The expression "labor turnover" has been made still more unsatisfactory by attaching to it a meaning which unnecessarily obscures the problem and makes the term even worse than useless. It has been officially defined by the organized employment managers of the country as "the number of separations from service."[1] It is evident that under some circumstances a part of the separations may be due to reduction of force and, therefore, have nothing to do with labor replacement.

Labor "turnover," then, in its most obvious and literal meaning, has only to do with that part of the labor flow (into and out of the establishment) which is involved in force maintenance. The amount of turnover is the amount of replacement, and no other word than "replacement" need be used in speaking of that aspect of labor mobility which has been generally referred to as "labor turnover." Just as "turnover" is a misleading term for use in reference to the phenomenon of replacement, so the term "percentage" is equally confusing for use in measuring the extent of this phenomenon. We know exactly the extent of the replacement necessary to maintain the normal work force when we know, let us say, that replacements took place in any given concern at the rate of 2 for each full-year worker in the normal work force. In other words, the phrase "rate of replacement" accurately designates what "percentage of turnover" has been loosely used to express.

Other items in the labor flow, and, indeed, its whole volume or flux, may be "rated" in a similar fashion. The rate at which employees leave may be called the separation rate, and the rate at which they are hired the accession rate. Whichever of these two rates is the lower may, for all practical purposes, be used as the

[1] And the "percentage of turnover" as "the ratio of the total number of separations . . . . to the average number of employees on the force report. . . . ." Standard definition of labor turnover and method of computing the percentage of labor turnover, National Conference of Employment Managers, Rochester, New York, May 9 to 11, 1918. *Monthly Labor Review* (June, 1918), pp. 172–73.

replacement rate. When the accession rate exceeds the separation rate, the difference between the two measures the labor increase rate. When the separation rate exceeds the accession rate, their difference measures the labor decrease rate. If the separation and accession rates are equal, either one may, of course, be used as the replacement rate and there is naturally neither increase nor decrease, the concern in question being neither expanding nor curtailing operations. The rates of increase and decrease may be considered as marginal rates in relation to the replacement rates, the increase rate measuring the amount, if any, of inflow over and above replacement inflow and the decrease rate measuring the amount, if any, of outflow over and above the outflow which has to be (and sooner or later is) replaced. The accession rate plus the separation rate gives the total rate of labor change—a single rate of labor flux on the basis of which the mobility of labor in one occupation, shop, industry, or locality may be compared with its mobility in any other occupation, shop, industry, or locality. These different types of labor mobility rates may be classified as follows:

1. Accession rate (or hiring rate)
2. Separation rate { quitting rate (leaving voluntarily); discharge rate ("firing" rate); lay-off rate }
3. Replacement rate or "turnover" (separations minus excess of separations over accessions)
4. Increase rate (accession rate minus separations rate)
5. Decrease rate (separation rate minus accession rate)
6. Flux rate (accession rate plus separation rate)[1]

The meaning of these different phases of labor mobility and their relation to each other are brought out in a somewhat clearer fashion in Table I, which shows for the years 1917 and 1918 the rate per full-year worker of flux, accession, separation,

[1] The use of the expressions "labor flux," "labor increase," and "labor decrease" has been suggested to the writer by Lucian W. Chaney, of the United States Bureau of Labor Statistics. Mr. Chaney also suggested the term "industrial rates" for use in general reference to labor mobility rates, accident rates, etc. The writer wishes to take this opportunity to express his indebtedness to Mr. Chaney in the whole subject-matter of this paper. Tables I, III, and V are based upon unpublished material in the files of the U.S. Bureau of Labor Statistics.

replacement, and labor increase and decrease in an automobile manufacturing plant.

The marginal flow, mentioned above, made up of excess hirings or excess separations, as the case may be, is not without importance. It is not labor replacement, however. Its importance, so far as force maintenance is concerned, is quite secondary. As a contributing or causal factor in unemployment in general, it is of vital importance both to the employing firm and to the community. Consider, for the moment, not merely the labor replacement involved in the establishment's force maintenance, but its labor

TABLE I

LABOR MOBILITY IN AN AUTOMOBILE MANUFACTURING PLANT, SHOWING FLUX, ACCESSION, SEPARATION, REPLACEMENT, AND LABOR INCREASE AND DECREASE RATES FOR 1917 AND 1918

YEAR	AVERAGE DAILY ABSENTEES	NUMBER OF FULL-YEAR WORKERS	ACCESSIONS PLUS SEPARATIONS (FLUX)	ACCESSIONS	SEPARATIONS	REPLACEMENTS	LABOR INCREASE	LABOR DECREASE
	Number							
1917	1,699	35,401	22,791	7,964	14,827	7,964	.....	6,863
1918	1,340†	31,911	50,921	26,572	24,349	24,349	2,223	.....
	Rate per Full-Year Worker							
1917	0.05	.....	0.64	0.23	0.42	0.23	.....	0.19
1918	0.04†	.....	1.60	0.83	0.76	0.76	0.07	.....

† Based on records for first six months only.

mobility situation as a whole. As already noted, this total stability situation is best represented by the sum of the accession and separation rates. This includes not only the accessions and separations which are replaced (and which form the basis of the replacement rate) but also any possible marginal flow (of excess recruits or "quitters,"[1]) expressed in the form of labor increase or decrease rates, as the case may be. This total establishment flow, as already intimated, is perhaps the best single index to the general labor stability situation in any establishment and to its standing as

[1] The word "quitters" is used in these pages in the sense of "terminating" and refers to all employees leaving service, for whatever reason.

compared with other establishments. This total flux figure is quite easily ascertainable and it can be quite easily worked out separately from replacement flux.[1]

From the standpoint of the employee, labor mobility means irregular employment and unemployment. In the present article we are not concerned with unemployment as a community problem or as a personal employee problem but simply as an establishment problem. The primary purpose here is to discuss the measurement of the labor flow into and out of the factory, and especially the measurement of that part of the labor flow which is involved (necessarily or unnecessarily) in the maintenance of the normal work force—the phase of labor mobility usually described as "labor turnover" and here referred to as labor replacement. The latter term expresses the employers' professional interest in unemployment as a phenomenon of the labor flow—into and out of his establishment. He is more concerned about the number of men it is necessary to hire to keep the establishment going than he is about the number of days unemployed individuals may be out of work each year.

II

It is proposed in this paper to make a definite change in computation practice in regard to all the factors entering into the measurement of the labor flow:

1. As to the relatively more variable factor—the industrial ebb and flow of labor—it is suggested that it be measured by (*a*) counting the replacements (i.e., separations which are replaced) instead of either the gross separations or the gross accessions, and (*b*) adding accessions to separations, thus showing the flux.

2. As to the relatively constant factor, or base—the normal or standard working force—it is proposed to use, instead of the average number on the pay-roll, the number of 3,000-hour (or 300-day) workers to which the total hours (or days) put in during the period are considered to be equivalent.[2] This number may be

[1] See chart on p. 457.

[2] The 3,000-hour basic year is a more or less arbitrary standard amount of employment, taken as being roughly equivalent to the amount of labor time normally put in by the average fully employed industrial employee. It is not meant to discount the very real advantages of the eight-hour day.

derived from the labor-time records or, failing such records, the daily attendance records or wages and salary-account records, as explained in another section of this paper. This standard base will be called for convenience "the equivalent full-year worker" or, more briefly, "the full-year worker."

3. It is then proposed, in place of the rate of gross separations per 100 in attendance or the rate of gross accessions per 100 on the pay-roll (both so-called "turnover percentages"), to use as an index of the shifting involved in labor maintenance the rate of replacement per equivalent full-year worker, and as an index to the general stability situation the total labor flux rate per full-year worker, the "full-year worker" being a standard unit, the number of which is obtained by dividing the total number of hours (or days) worked during the period considered by the 3,000 hours (or 300 days) of a standard working year. The rate is arrived at by dividing the number of replacements by the number of "full-year workers." As will be explained in another section of this article, not only this replacement rate, but the hiring, separation, labor increase, labor decrease, and total labor flux rates can each be separately computed and their general trend and their relations to each other readily charted in graphic form.

III

The Employment Managers' Association of Boston defined "labor turnover" as "the change in personnel brought about by hiring and the termination of employment." Here we have, apparently, the identification of labor turnover with a total rate of labor change. It seems more convenient and more accurate to think of "turnover" as referring primarily to the separations from service which must be replaced and to the accessions which are necessary to replace them. What has been described above as marginal flux—the flow of labor due to permanent extension of plant or permanent reduction of force—would be considered as constituting a general employment problem less intimately concerning the individual establishment than the domestic problem of the maintenance of its labor force from day to day.

In addition to the replacement flow directly involved in maintenance of force there is, then, the additional flow incident to the (more or less) permanent building up or cutting down of the size of the standard working force resulting from a permanent addition to plant or the (more or less) permanent discontinuance of some department or the curtailment of operations. It is not implied that this marginal flow of labor is of no concern to the employer or to the employment manager. It is of vital concern to them both. And, furthermore, it is one of the greatest sources of irregular employment and stands even more in need of reduction, perhaps, than does the labor flow which is involved in maintenance of force. The point here made is not that this marginal labor flow is unimportant or free from menace, both to the workers and to the community, but that it should not be dragged in under the same "labor turnover percentage" formula that is intended to measure the rate of labor replacement. The term labor turnover should be (1) identified with the labor flow involved in labor maintenance, or (2) identified with the sum of all accessions to and separations from service, that is, labor flux, or (3) thrown out entirely. The use of a term such as "labor turnover" and especially of such a phrase as "the percentage of labor turnover" seems to be of very doubtful value. The difficulty is that such a formula tempts us to use it without reference to its necessary base. Certainly a clear analysis of any establishment's labor stability situation and an accurate measurement of the extent of its labor instability is possible without reference to a "percentage of turnover." Reference is made to it in this paper merely to point out that the same facts are shown up without it and shown up with less doubt as to their meaning.

The essential thing about labor instability, so far as establishment force maintenance is concerned, is the ratio between the number of replacements made and the standard working force. The natural way to express this ratio is to specify how many replacements are made during, say, one year in order to keep each position in the working force continuously filled. This is, in statistical terms, the rate of replacement per full-year worker.

IV

The employment manager is primarily concerned with the elimination of waste in force maintenance. One of his primary objects at the present time is to cut down the number of replacements involved in keeping up the force. He is necessarily concerned in reducing the marginal flux caused by shut-down and expansion by formulating plans for the regularization of manufacture, etc., but this concern is incidental and he is, moreover, relatively powerless to accomplish much in regard to it. His chief business is accurately to measure and analyze the rates of replacement and flux and to use this information in making his plans for reducing these rates.

Labor replacements, of course, can never be completely eliminated. Indeed, it is hardly probable that they can be reduced to the low point which many employment managers think possible. They, like the rest of us, are rather likely to assume that all labor mobility is evil, except possibly the irreducible minimum caused by death or election to the presidency. Beyond a certain point the reduction of labor mobility is not even desirable. A one hundred per cent reduction in the replacement rate, if it were possible, would be a calamity. Labor which is completely stabilized is completely ossified. Perhaps the ten-day "floaters" in a factory are more enterprising, on the average, than the ten-year "stickers." If this is so and the "turnover" reducers should overreach themselves in their enthusiasm for reduction, the National Association of Employment Managers may sooner or later find itself challenged by a National Association for Increasing the Mobility of Labor. Within wide limits, however, we are all agreed that labor mobility, in the form and degree in which it appears in our modern factory communities, is a menacing evil and a serious waste both to employer and employee. A given degree of instability, of course, is more or less serious according to the industry involved. Thus a rate of 3 per full-year worker would be extraordinary for a mercantile establishment but not for a steel mill. The discussion in this paper proceeds on the assumption that a great part of the country's labor mobility is unnecessary and that it is therefore very important to measure its extent.

V

The problem of the measurement of the ebb and flow of labor through our industrial establishments has reached a point where a reconsideration of currently accepted methods is a matter of urgent necessity. As matters stand at present, employment managers and students of the labor problem are in danger of having clamped down on them a working method for the measurement of the flow of labor through the factory which distorts the facts as to the stability of labor and makes practically impossible all comparisons of results for different plants, industries, and localities.

The principal agencies which have been engaged in the discussion of this problem and the elaboration of methods of measurement and amelioration are the various employment managers' associations and the United States Bureau of Labor Statistics. In May, 1918, the National Association of Employment Managers met in Rochester, New York. This conference spent some hours in the discussion of methods of computing "turnover," decided "that turnover figures be confined to 'exits' without qualifying phrase," that is, that it include all separations, and appointed a committee to formulate a definition of labor turnover and work out a method of turnover computation.[1] This committee formulated the following "standard definition . . . . and method of computing the percentage of labor turnover":

> The percentage of labor turnover for any period considered is the ratio of the total number of separations during the period to the average number of employees on the force report during that period. The force report gives the number of men actually working each day as shown by attendance records. . . . . To compute the percentage of labor turnover for any period, find the total separations for the period considered and divide by the average of the number actually working each day throughout the period.[2]

The foregoing standard definition and computation formula has received the indorsement of the Bureau of Labor Statistics and has been followed (less and less closely, however, from month to month)

[1] The discussion is published in the "Proceedings of the Employment Managers' Conference, Rochester, New York," *Bulletin 247*, United States Bureau of Labor Statistics, pp. 206–13.

[2] The committee's report appears in full in the *Monthly Labor Review*, June, 1918, pp. 168–77.

in the reports on labor "turnover" which the Bureau has been publishing in its *Monthly Labor Review* during the past year.[1] In its earlier studies of the subject the Bureau computed the turnover by dividing the number of replacements by the average number on the pay-roll. This was the method used in its report on "Street Railway Employment"[2] and in an article on "Labor Turnover of Seamen on the Great Lakes" published in the month following the Rochester convention.[3] Moreover, at that very convention the Bureau's chief statistician insisted that "turnover" should be identified with replacements.[4]

It is quite evident that the employment managers are not by any means unanimous in their approval of the Rochester formula. In a symposium on "labor turnover" computation published in the September, 1918, number of *Industrial Management*, the majority of those contributing expressed themselves as opposed to the gross separations item, at least, in the Rochester formula.[5] The February, 1919, number of the same magazine contained an elaborate article on this subject, which, although not convincing in other particulars, was clear as to the superiority of replacements over gross separations.[6]

[1] *Monthly Labor Review*, October, 1918; January, February, March, April, May, September, November, and December, 1919. However, the Bureau has lately made a complete change in its method of computation. See note 1 on p. 30.

[2] "Street Railway Employment in the United States," *Bulletin 204*, pp. 193–203.

[3] Emil Frankel, "Labor Turnover of Seamen on the Great Lakes," *Monthly Labor Review*, VI (June, 1918), pp. 1408–15. See especially the table on p. 1410 containing crew turnover figures based on replacements.

[4] Proceedings, Bureau of Labor Statistics, *Bulletin 247*, p. 209.

[5] *Industrial Management*, September, 1918, pp. 239–45.

[6] Winthrop Talbot, "Labor Maintenance and Its Indices," *Industrial Management*, February, 1919, pp. 127–30. A defense of the use of separations in computing the index of stability is made by Mr. H. G. Hayes in the *American Economic Review*, December, 1919, pp. 903–5, in commenting upon the replacements-divided-by-average-pay-roll formula suggested by Mr Paul H. Douglas in the June issue of the same journal (pp. 402–5). In the March, 1920, issue Mr. Douglas makes a rejoinder to Mr. Hayes (pp. 106–8). A more completely worked out analysis of the merits of replacements versus separations as units of measurment is made by Mr. S. H. Slichter in the *Quarterly Journal of Economics* for February, 1920 (pp. 329–45). Mr. Slichter favors separations, but apparently fails to realize that, without considering the accessions, he is reporting only a part of the labor change situation—the ebb without the flow. He also makes a well-considered plea for the retention of the word "turnover."

VI

The figure obtained by adding the accessions to the separations indicates the volume of change or the total amount of shifting in the establishment personnel, but throws no light on the crucial question, How much replacement was necessary to maintain the standard force? It is evident that, in an industry or establishment which is cutting down its force, the accessions to that force most accurately measure the amount of replacement. Practically, then, we have replacements identified with the number leaving when a business is "on the make" and with the number hired when it is on the decline. The inescapable result is a net separation or replacement figure. The margin is something apart from replacement: where it is made up of an excess of accessions it marks an increase in the standard working force—the base in our calculation —and a decrease in the amount of unemployment in the community; where it is made up of an excess of separations it marks a decrease in the base—and an increase in the amount of unemployment in the community.

Labor turnover has to do with labor replacements, and the formula for its computation must measure replacements. This is the acid test of any turnover computation formula which is expected accurately to measure labor stability during periods of industrial shut-down as well as in times of industrial expansion. The Rochester formula does not meet this test, for the reason that that formula measures turnover by total separations. Two years ago industry was expanding. The number of separations from service, therefore, was less than the number of accessions to service. In these circumstances all of the separations must have been replaced. At that time, then, the formula correctly measured replacements. After the armistice the situation was reversed. Separations, in general, exceeded accessions. Some of them, therefore, were not replacements. In such circumstances the number of accessions is the closest approximation to the number of replacements and that number, and not the number of separations, should be divided by the number of full-year workers to get the replacement rate. We are concerned with net separations and not with total separations. The method suggested may be put briefly: When the

accessions exceed the separations, divide the separations by the number of full-year workers; when the separations exceed the accessions, divide the accessions by the number of full-year workers. This

TABLE II

LABOR TURNOVER AND NATURE OF SEPARATIONS DURING THE YEAR ENDING JUNE 1, 1918, SHOWING THE NUMBER, PER CENT DISTRIBUTION, AND RATE PER FULL-YEAR WORKER IN EACH MINE OR PLANT DIVISION*

MINE OR PLANT DIVISION	AVERAGE NUMBER OF FULL-YEAR WORKERS	EMPLOYEES HIRED DURING THE YEAR	SEPARATIONS						"PER CENT OF TURNOVER" (ROCHESTER FORMULA)†
			Discharged	Entered Military Service	Quit	Total Classified	No Record	Grand Total	
	1	2	3	4	5	6	7	8	9
	Number								
Mine A	58	210	29	.....	115	144	29	173*	.....
Mine B	247	883*	281	13	921	1,215	45	1,260	.....
Smelter	391	950*	140‡	37	768	945	61	1,006	.....
Electrozinc plant	138	567*	88	5	488	581	10	591	.....
Total	834	2,610*	538	55	2,292	2,885	145	3,030	.....
	Per Cent Distribution of Separations								
Mine A	.....	.....	20	.....	80	100	.....	.....	.....
Mine B	.....	.....	23	1	76	100	.....	.....	.....
Smelter	.....	.....	15	4	81	100	.....	.....	.....
Electrozinc plant	.....	.....	15	1	84	100	.....	.....	.....
Total	.....	.....	19	2	79	100	.....	.....	.....
	Rate per Full-Year Worker								
Mine A	.....	3.6	0.5	.....	2.0	2.5	0.5	3.0*	298*
Mine B	.....	3.6*	1.1	0.1	3.3	4.9	0.2	5.1	510
Smelter	.....	2.4*	0.4	0.1	2.0	2.4	0.2	2.6	257
Electrozinc plant	.....	4.1*	0.5	.....§	3.5	4.2	0.1	4.3	428
Total	.....	3.1*	0.6	0.1	2.7	3.5	0.2	3.6	363

* Replacement numbers and rates are marked by asterisks.

† That is, the separation rate per 100 on the work force.

‡ Including 47 who were laid off for indefinite periods on account of lack of work.

§ Less than 0.05.

elimination of the excess of separations over accessions or vice versa, as the case may be, trims the labor flow down to actual replacements.

The relation between the numbers of separations and accessions and the identification of the replacements are shown in Table II, which is reproduced, with some revision, from an article by the

writer in the May, 1919, number of the *Monthly Labor Review*.[1] It shows the labor flux during the year ending June 1, 1918, among different classes of employees in a California copper mining and smelting plant.

In this table replacements are indicated by asterisks. The number of replacements, divided by what may provisionally be called the normal number of employees, gives a rate of replacement. This may be expressed as a rate per 100, as a rate per 1,000, or as a rate per single full-year worker, as desired. The "per cent of turnover" figures in column 9 are easily seen to be simply the rate of gross separation per 100 normally employed. The rates per full-year worker of both separation and accession are given at the bottom of the table. It is to be noted that in one division (Mine A), where the separations are less than the accessions and where they are, consequently, identical with replacements, the replacement rate is identical with the Rochester turnover percentage, except that one is a rate per single full-year worker and the other a rate per 100. An inspection of the table shows that a special series of "turnover" rates or percentages is quite unnecessary and befogs the issue. The whole stability situation as to frequency of hiring, of separation, and of replacement is revealed in the rates at the bottom of the table. In the plant as a whole during the year there were 3.6 separations, 3.1 accessions, and 3.1 replacements per full-year worker.[2]

VII

The whole significance of the use of replacements rather than gross separations as an index of labor flux, as well as the relation between the accession, separation, and replacement rates, is best brought out by the use of data showing the average number of employees and the number hired and leaving by months over a fairly long period. This will give some notion as to the trend of accessions, separations, and replacements. Such illustrative data are contained in Table III. The figures presented are from a metal

[1] "Labor Turnover among Employees of a California Copper Mining and Smelting Company," *Monthly Labor Review*, viii (May 1919), p. 66.

[2] See the detailed discussion of this subject in the article from which Table II is taken, *Monthly Labor Review*, May, 1919, pp. 65–71.

TABLE III

TREND OF LABOR FLUX, ACCESSION, CLASSIFIED SEPARATION, AND REPLACEMENT RATE IN A METAL PRODUCTS MANUFACTURING PLANT, BY MONTHS, FROM 1912 TO 1919

YEAR ENDING WITH	AVERAGE NUMBER OF FULL-YEAR WORKERS	MOVING ANNUAL RATES PER FULL-YEAR WORKER					
		Labor Flux (Separations plus Accessions)	Total Accessions*	Classified Separations			
				Total*	Left Voluntarily	Laid off	Discharged
December 31, 1912...	1,088	4.10	2.20	*1.90**	1.23	0.43	0.25
January 31, 1913.....	1,114	4.21	2.28	*1.93**	1.28	0.40	0.26
February 29 (28).....	1,138	4.18	2.22	*1.97**	1.31	0.41	0.25
March 30.....	1,158	4.05	2.14	*1.91**	1.24	0.42	0.25
April 30.....	1,174	3.96	2.08	*1.88**	1.21	0.41	0.25
May 31.....	1,185	3.96	2.09	*1.88**	1.21	0.42	0.24
June 30.....	1,214	3.98	2.18	*1.80**	1.28	0.27	0.24
July 31.....	1,241	4.03	2.05	*1.97**	1.29	0.44	0.24
August 31.....	1,245	4.02	2.04	*1.98**	1.27	0.46	0.24
September 30.....	1,248	3.98	2.02	*1.96**	1.26	0.46	0.24
October 31.....	1,258	4.03	2.04	*1.99**	1.24	0.49	0.26
November 30.....	1,264	3.91	1.96	*1.95**	1.21	0.48	0.26
December 31.....	1,262	3.68	*1.81**	1.87	1.14	0.47	0.25
January 31, 1914.....	1,259	3.51	*1.73**	1.78	1.07	0.47	0.24
February 29 (28).....	1,262	3.43	*1.70**	1.73	1.01	0.47	0.24
March 30.....	1,267	3.38	1.71	*1.67**	.96	0.47	0.24
April 30.....	1,276	3.18	1.60	*1.57**	.86	0.49	0.22
May 31.....	1,277	3.02	1.53	*1.50**	.75	0.53	0.22
June 30.....	1,293	2.86	1.51	*1.36**	.64	0.50	0.22
July 31.....	1,299	2.96	1.49	*1.48**	.61	0.64	0.22
August 31.....	1,293	2.89	*1.39**	1.50	.51	0.77	0.21
September 30.....	1,279	2.81	*1.33**	1.49	.49	0.80	0.20
October 31.....	1,260	2.68	*1.26**	1.43	.46	0.79	0.18
November 30.....	1,252	2.70	*1.26**	1.44	.45	0.80	0.18
December 31.....	1,234	2.58	*1.16**	1.42	.44	0.81	0.16
January 31, 1915.....	1,217	2.55	*1.17**	1.39	.42	0.81	0.16
February 29 (28).....	1,197	2.50	*1.12**	1.38	.41	0.81	0.15
March 30.....	1,176	2.40	*1.07**	1.33	.39	0.81	0.12
April 30.....	1,152	2.31	*1.01**	1.30	.39	0.79	0.12
May 31.....	1,136	2.12	*.87**	1.24	.39	0.75	0.11
June 30.....	1,088	1.93	*.68**	1.24	.36	0.79	0.09
July 31.....	1,053	1.70	*.71**	.99	.38	0.53	0.07
August 31.....	1,049	1.60	*.73**	.87	.42	0.38	0.07
September 30.....	1,050	1.63	*.76**	.87	.44	0.36	0.07
October 31.....	1,050	1.62	*.76**	.86	.46	0.34	0.07
November 30.....	1,047	1.59	*.73**	.86	.50	0.32	0.05
December 31.....	1,047	1.90	1.00	*.91**	.54	0.31	0.05
January 31, 1916.....	1,062	2.45	1.31	*1.14**	.76	0.32	0.07
February 29 (28).....	1,091	2.93	1.60	*1.32**	.92	0.31	0.09
March 30.....	1,111	3.36	1.78	*1.58**	1.17	0.30	0.11
April 30.....	1,128	3.97	2.08	*1.89**	1.49	0.29	0.11
May 31.....	1,152	4.64	2.43	*2.21**	1.80	0.29	0.12
June 30.....	1,188	5.02	2.70	*2.32**	2.00	0.18	0.14

* The replacement rates are marked with an asterisk.

TABLE III—*Continued*

Year Ending with	Average Number of Full-Year Workers	Moving Annual Rates per Full-Year Worker					
		Labor Flux (Separations Plus Accessions)	Total Accessions*	Classified Separations			
				Total*	Left Voluntarily	Laid off	Discharged
July 31	1,225	5.22	2.75	*2.47**	2.17	0.13	0.16
August 31	1,249	5.59	2.95	*2.65**	2.35	0.12	0.18
September 30	1,281	5.90	3.09	*2.81**	2.52	0.10	0.19
October 31	1,314	6.28	3.32	*2.97**	2.67	0.10	0.20
November 30	1,355	6.67	3.60	*3.08**	2.77	0.09	0.21
December 31	1,392	6.63	3.45	*3.18**	2.88	0.09	0.21
January 31, 1917	1,406	6.40	3.25	*3.15**	2.86	0.08	0.20
February 29 (28)	1,413	6.33	3.20	*3.12**	2.85	0.08	0.20
March 30	1,433	6.35	3.25	*3.10**	2.83	0.07	0.20
April 30	1,456	6.27	3.21	*3.06**	2.79	0.07	0.20
May 31	1,463	6.21	3.15	*3.06**	2.78	0.08	0.20
June 30	1,466	6.20	3.15	*3.05**	2.79	0.06	0.20
July 31	1,489	6.47	3.36	*3.11**	2.90	0.03	0.19
August 31	1,515	6.78	3.55	*3.23**	3.02	0.03	0.18
September 30	1,536	7.03	3.69	*3.35**	3.13	0.03	0.19
October 31	1,563	7.05	3.68	*3.37**	3.14	0.04	0.19
November 30	1,588	6.93	3.57	*3.36**	3.13	0.04	0.20
December 31	1,606	6.83	3.49	*3.33**	3.08	0.06	0.20
January 31, 1918	1,625	6.73	3.45	*3.28**	3.02	0.06	0.20
February 29 (28)	1,634	6.64	3.36	*3.28**	3.03	0.06	0.18
March 30	1,637	6.57	3.30	*3.27**	3.04	0.06	0.17
April 30	1,636	6.48	3.29	*3.19**	2.95	0.07	0.17
May 31	1,651	6.23	3.13	*3.10**	2.87	0.07	0.17
June 30	1,641	6.07	*3.02**	3.05	2.83	0.07	0.16
July 31	1,645	6.04	3.09	*2.95**	2.73	0.06	0.16
August 31	1,652	5.76	2.90	*2.86**	2.62	0.07	0.17
September 30	1,654	5.70	2.86	*2.84**	2.60	0.07	0.17
October 31	1,642	6.08	*2.81**	3.28	2.65	0.46	0.17
November 30	1,591	6.42	*3.08**	3.34	2.67	0.51	0.16
December 31	1,560	6.59	*3.26**	3.33	2.67	0.49	0.17
January 31, 1919	1,547	6.77	3.40	*3.37**	2.70	0.49	0.19
February 29 (28)	1,530	6.75	*3.34**	3.41	2.67	0.54	0.20
March 30	1,512	6.55	*3.21**	3.34	2.56	0.56	0.22
April 30	1,475	6.39	*3.01**	3.38	2.47	0.67	0.25

* The replacement rates are marked with an asterisk.

products manufacturing establishment in the Middle West. They show for the twelve-month periods indicated the rates of labor change (flux, accession, and classified separation) per full-year worker. They are, in other words, "smoothed" rates derived (by the method of moving averages) from the actual rates for each month, which latter in turn are computed by dividing the actual

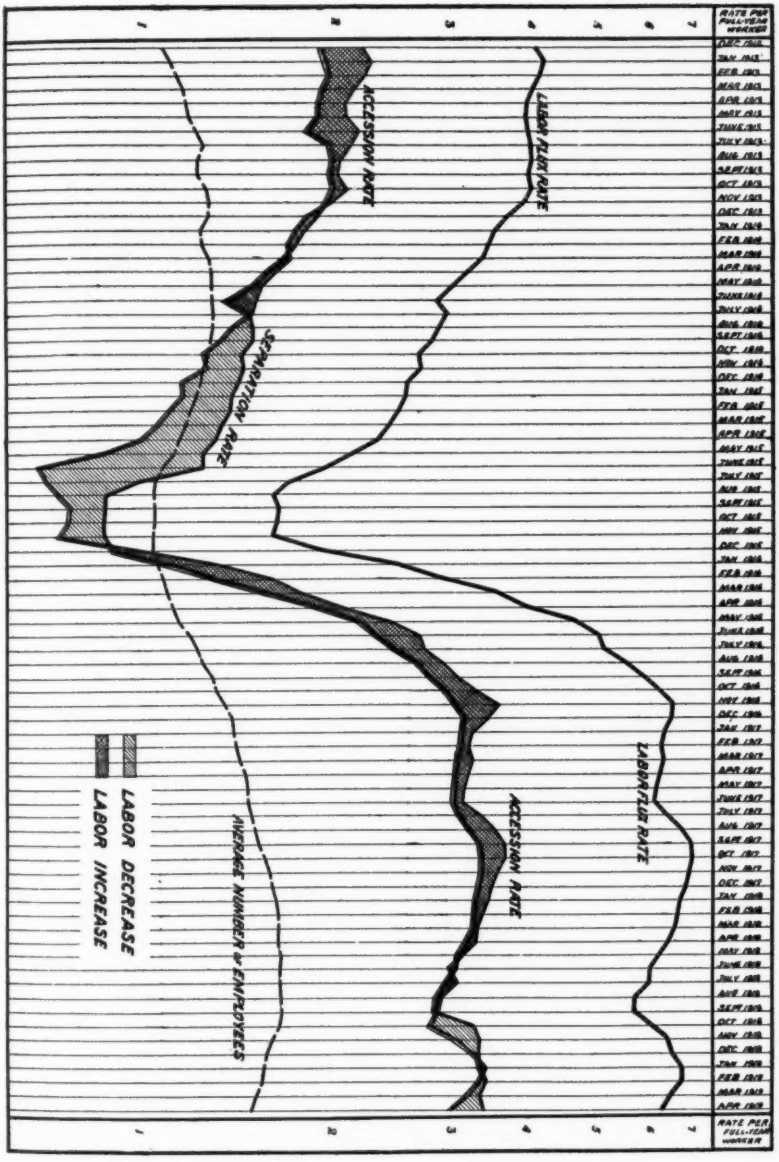
number of labor changes of each particular kind that occurred during each month (the variable) by the number of full-year workers[1] employed during that month (the base). Thus, e.g., the figure 2.20 at the top of the accessions column is the accession rate for the twelve-month period ending December 31, 1912, and the figure 2.28 is the rate for the twelve-month period ending January 31, 1913, etc. Replacement rates among total separations and accessions are indicated by asterisks.

The moving annual labor change rates given in Table III for the overlapping twelve-month periods are shown graphically in the chart on p. 457.[2] The two curves marked accessions and separations tell the whole story. There are obviously two main movements. There was a distinct downward movement—a movement toward greater stability—during the greater part of the four-year period, 1912–15. The following four years—the years of the world-war—witnessed a movement, quite precipitate at first, toward greater mobility. The accession and separation rates follow a roughly parallel course during the seven-year period. The average number of employees underwent a slight increase. The flux rate curve shows a form roughly corresponding, of course, to the trend of accessions and separations. It was 4.10 per full-year worker in 1912, 1.91 in 1915, and 6.39 in 1919. The replacement curve (marking the trend of the starred figures in Table III) is shown on the chart by a line drawn parallel to a line connecting the lower points in the lines showing accessions and separations. It is evident that at the beginning of the period accessions were in excess, so that separations measured replacements, whereas at the end of the period the reverse relation held true and accessions consequently measured replacements.

In 1912 employees in this particular factory were being replaced at the rate of 1.90, in 1915 at the rate of 0.91, and in 1919 at the rate of 3.01 per full-year worker. Either the replacement curve or the flux curve would seem to serve quite well as single indices of the labor stability situation. The labor flux rate was cut down 54 per cent during the period from January 1, 1912, to December 31,

[1] That is to say, 3,000-hour workers, as explained above.

[2] The chart was drawn by Mr. Leon Kirsch, of the United States Bureau of Labor Statistics.


RATE PER FULL-YEAR WORKER
ACCESSION RATE
LABOR FLUX RATE
SEPARATION RATE
INCREASE NUMBER of EMPLOYEES
LABOR DECREASE
LABOR INCREASE
ACCESSION RATE
LABOR FLUX RATE
RATE PER FULL-YEAR WORKER

1915, but between the latter date and April 30, 1919, it underwent an increase of 235 per cent.

When the accessions are in excess of the separations, the factory is building up its force, and the extent to which they are in excess measures the amount of recruiting being done. When the separations, on the other hand, exceed the accessions, the factory must be cutting down its operations and reducing its force, and the margin by which the separations are in excess measures the amount of labor decrease. In the chart the dark shaded areas show the extent of labor increase and the light shaded areas the extent of labor decrease.

An examination of the discharge, lay-off, and voluntary quitting rates in Table III indicates that it was the great increase in the number of men laid off in the latter part of 1914 that raised the separation rate during that time so considerably above the accession rate. This shows how inaccurate the separation curve would be if taken to measure "turnover"—unless that term is to be used in reference to something entirely different from the amount of change involved in maintenance, that is to say, replacement. Almost the whole margin, in this part of the period, between the separation and accession rates is due to increased lay-offs, i.e., to a (more or less) permanent decrease in the size of the standard working force. Remarkable reductions took place during the first three and a half years in both the quitting and discharge rates. When the war began in Europe, this establishment had, apparently, gone a long way toward the elimination of discharges as a factor in turnover, having reduced its rate of discharge from 0.25 to 0.05 per full-year worker, or 78 per cent. But during the war period from December 31, 1915, to April 30, 1919, the discharge rate increased 400 per cent. The most important pre-war reduction is, of course, in the quitting rate, because the quitters are responsible for the bulk of the turnover. This company's quitting rate went down from 1.23 per full-year worker in January, 1912, to 0.54 in December, 1915, a decline of 56 per cent. But the quitting rate increased 357 per cent between December 31, 1915, and April 30, 1919. It is important to note, finally, that it is the voluntary quitting rate which primarily determines the total separation rate.

The disturbing effect of war conditions is very evident. Both accession and separation rates had risen in 1918 to points far above the high points of the 1912–15 period. A comparison of the accession, separation, replacement, and labor flux rates shown in Table III for the 12-month periods ending December 31, 1912, December 31, 1915, December 31, 1918, and April 30, 1919, is made in Table IV. This alignment shows that in this plant, at least, the war pushed all rates except the lay-off rate well above the remarkably favorable low points reached in 1915. Worse

TABLE IV

ANNUAL ACCESSION, REPLACEMENT, AND SEPARATION RATES IN A METAL PRODUCTS MANUFACTURING ESTABLISHMENT

TYPE OF RATE	RATES FOR 12-MONTH PERIODS ENDING			
	Dec. 31, 1912	Dec. 31, 1915	Dec. 31, 1918	April 30, 1919
Flux	4.10	1.91	6.59	6.39
Accession	2.20	1.00	3.26	3.01
Replacement*	*1.90**	*0.91**	*3.26**	*3.01**
Separation	1.90	0.91	3.33	3.38
Quitting	1.23	0.54	2.67	2.47
Lay-off	0.43	0.31	0.49	0.67
Discharge	0.25	0.05	0.17	0.25

* Replacement rates are marked with asterisks.

yet, it pushed all except the lay-off and discharge rates back to a point even higher than the maximum rates of 1912, so that the total separation and accession rates and the replacement rate, which in this case is identical with the separation rate, rose to points never before reached within the period covered by the figures reported. It is interesting to note the effect of the war on the lay-off rate. During the period 1912–15 it was reduced 28 per cent. War conditions apparently greatly accelerated this reduction and showed a lay-off rate of 0.07 per full-year worker for the year ending May 31, 1918, as compared with 0.31 for the calendar year 1915—a reduction of 77 per cent. But in the latter part of 1918, the lay-off rate began to rise and the rate for the year ending April 30, 1919, stood at 0.67, the highest it had been since 1915. Despite the increased war demand for labor the discharge rate

increased from 0.05 per full-year worker in 1915 to 0.17 in 1918—an increase of 209 per cent. It has continued to rise, and stood at 0.25 for the year ending April 30, 1919.

VIII

In the preceding discussion the problem of the base in the calculation of labor stability has been carefully avoided. Premature controversy about it has been avoided by use of the very general phrase: the "standard" or "normal" working force. As a matter of fact, no one, so far as the writer is aware, has yet used a genuine standard base in measuring labor mobility. Several near-standards have been used. The Bureau of Labor Statistics in its first investigation took the average of the weekly, fortnightly, or monthly numbers on the pay-roll as representing the standard working force. This is a padded "standard," as will soon be made evident. The Rochester Conference, it has been noted, proposed that the average number actually working from day to day be considered the "standard" working force. This, it is believed, comes nearer to a genuine standard base than any other standard which has been proposed. The difficulty with both these methods is that they are not standards at all in the proper sense of the word. They may, indeed, constitute fairly accurate bases for determining the rate of labor flow in any particular establishment, but they do not constitute any common base for different establishments.

The average daily attendance plan was proposed very largely because it approximates more closely the average number of full-year workers. Since the amount of shifting involved in force maintenance is measured by the ratio between the number of replacements made and the average number of workers who are continuously employed throughout the period, it is evident that the requisite standard is to be arrived at by somehow pruning down the pay-roll figures to the equivalent number of full-year workers, as defined above.

It is suggested that this pruning can be done most effectively and done in a way most conducive to standardization by using as an ultimate base the actual number of hours (or, failing a record of labor hours, the number of days) put in during the period considered.

This aggregate total of labor hours can easily be reduced to standard-full-year-worker units, as already indicated, by dividing it by 3,000 if it is expressed in hours, or by 300 if it is expressed in days.

A simplified example may serve to make this matter more clear: Assume, for statistical purposes, instead of a 365-day year, a 300-day year, which, in fact, is fairly close for industry generally to the actual working time. And for the sake of convenience and uniformity and without reflecting on the merits of the shorter work-day, assume also a 10-hour day. Then the standard year is 3,000 hours. Now take a hypothetical plant where during the year

100 men are each employed 3,000 hours, making altogether 300,000 hours,
100 men are each employed 1,500 hours, making altogether 150,000 hours,
100 men are each employed 2,700 hours
and each is absent 300 hours, making altogether 300,000 hours,
and an aggregate total of 750,000 hours,

If we take the number on the pay-roll we have 300 as the "standard" working force. By dividing the 750,000 man-hours of employment by 3,000, we get 250 as a standard working force based on the equivalent number of full-year employees. If the 30,000 absentee hours are not recorded and so necessarily left out of the calculation, we have 720,000 man-hours of employment—or, better, man-hours actually worked—divided by 300, giving 240 as the standard working force based on the equivalent number of full-time workers. We have, then, three figures for the standard working force: (1) 300, on the average pay-roll basis; (2) 250, on the labor-hours plus absentee-hours basis; (3) 240, on the bare labor-hours basis.

It is believed that the "average pay-roll" basis can be at once eliminated as an inflated and inaccurate base. Some appreciation of the amount of this inflation, due to dead and broken-time names on the pay-roll, may be had by an examination of Table V, which shows, for each month of the year 1915, the average daily work force (or average daily attendance), the average daily number of absentees, the total number on the pay-roll, and the amount of "dead" or broken time on the pay-roll due to persons separating but not being removed from the pay-roll until after the end of the pay-roll period. The figures are from the metal products manufacturing concern already referred to.

The figures of Table V indicate that, for the year as a whole, the daily work force in actual attendance is about 90 per cent of the total number on the pay-roll and that the absentees average about 2 per cent of the daily work force. The sum of the labor time actually worked (average daily work force) and absentee time falls far short of the total pay-roll figure. The difference, amounting to about 8 per cent of the average number actually working in this plant in 1915, is due to the fact that there necessarily remain

TABLE V

RELATION BETWEEN AVERAGE DAILY NUMBER ACTUALLY WORKING, AVERAGE DAILY NUMBER OF ABSENTEES, AND TOTAL NAMES ON PAY-ROLL, BY MONTHS, 1915

MONTH	AVERAGE DAILY WORK FORCE	AVERAGE DAILY ABSENTEES		PERSONS LEAVING BUT NOT REMOVED FROM PAY-ROLL UNTIL AFTER END OF PAY PERIOD		TOTAL NUMBER OF NAMES ON PAY-ROLL	PER CENT DAILY WORK FORCE IS OF TOTAL PAY-ROLL
		Number	Per Cent of Daily Work Force	Number	Per Cent of Daily Work Force		
January	1,136	16.2	1.4	109.8	9.7	1,262	90
February	1,157	23.5	2.0	75.5	6.5	1,256	92
March	1,218	19.1	1.6	100.9	8.3	1,338	91
April	1,229	24.2	2.0	68.8	5.6	1,322	93
May	1,230	28.0	2.3	37.0	3.0	1,295	95
June	1,116	19.8	1.8	77.2	6.9	1,213	92
July	847	12.7	1.5	51.3	6.1	911	93
August	915	14.0	1.5	111.0	12.1	1,040	88
September	908	16.0	1.8	74.0	8.1	988	91
October	902	19.9	2.2	58.1	6.4	980	92
November	888	17.0	1.9	140.0	15.8	1,045	85
December	1,023	31.0	3.0	95.0	9.3	1,149	89

on the pay-roll through the pay period, if not longer, the names of those employees who left during the pay period and who, consequently, had served only for a part of the pay period. This means that the full and active working complement is only about 90 per cent of the apparent complement shown on the pay-roll. A small part of the remaining 10 per cent is accounted for by absentees, but the bulk of it is due to the counting of the names of those employees who served only a part of the pay period but whose names were not dropped from the pay-roll until after the end of the pay period. This margin by which worked time plus absentee time falls short of the total pay-roll figures may be called the margin of broken

time. It is obvious that the gross pay-roll figures must be discounted for this margin. When this is done there is left the average number of full-year employees (including absentees); when absentee time, finally, is deducted there is left the actual average daily attendance which can easily be expressed in terms of 3,000-hour workers.[1] The foregoing necessary corrections of the gross pay-roll figures force the conclusion that the true base in labor mobility rate calculation must be the actual labor time put in, preferably but not necessarily exclusive of absentee time, and expressed in some such standard equivalent unit as the 3,000-hour, or full-year, worker.

The superiority of labor time (which is the discounted pay-roll) over total pay-roll and over labor-plus-absentee time as a base for computation is evident at once from an examination of Table V. The proportions both of broken time and absentee time are subject to wide fluctuations, and their inclusion in the base would unquestionably make it less of a constant and more of a variable. A standard unit of measurement should obviously be really a standard, that is to say, it should be as unvarying as possible. The use of labor hours (in 3,000-hour units) provides an unvarying unit amount of employment and at the same time eliminates the factors of absentee and "broken pay-roll time," both of which are subject to wide fluctuations from month to month in the same plant, and, more especially, show enormous differences between establishments and industries.

IX

The difficulty in regard to absentee time is intensified by the fact that the actual industrial practice in regard to it varies so widely between different plants. Some employers immediately hire new workers to take the place of those who are absent. Others contrive to get along without the absentees and do not try to replace them unless they fail to return after a specified time, the length of which time varies from plant to plant. Obviously, in those plants where absentees are treated in exactly the same way as quitters,

[1] Viz., by multiplying the average daily attendance by the hours worked per day, that product by the days worked per year, and dividing the resultant number of labor hours by 3,000.

their absent time should be excluded from the computation of the standard working force. Where the practice is to act consistently on the theory that an employee is still an employee, even though absent, it would seem advisable to include such absentee time in the estimate of the standard.

A writer in the *American Economic Review*[1] criticizes the use of average attendance figures on the ground that such use results in the inclusion of absenteeism with turnover, of which it is not a part. So it does. But the substitute he suggests (the average pay-roll figures) would seem to make the matter worse rather than better; for while this makes absentee hours a part of the labor base rather than a part of the labor flow, it further, and unwarrantably, distends the base by including as full-time workers large numbers of broken or short-time employees. This surely is straining at a gnat and swallowing a camel. For the absentee hours which are taken out of the base bulk very small in number when compared with the broken-time hours forced into it by the use of pay-roll numbers. It would not be a matter for criticism that absentee hours are included as a part of the working force, although the advisability of such inclusion is doubtful, if it were not that the method of doing it involves also the inclusion of a large proportion of short-time workers as full-time workers and the consequent undue enlargement of the base. Assuming no absenteeism, we might conceivably have, in a plant using semi-monthly pay-rolls, 100 men working the first week only of the pay period and 200 men working the full pay period. There will then be 300 names on the pay-roll for this particular pay period, whereas the working force was really equivalent to 250 full-pay-period workers. Absentee time can be figured independently in any case, and the amount of it is so slight that it is perhaps immaterial whether it is included or not. Whatever is done, it is to be recognized as something apart from labor mobility and yet often a causal factor in increasing it. On the whole, it is probably better to leave absentee time entirely out of account in the measurement of establishment labor stability.

[1] Note on computation of labor turnover by P. H. Douglas, *American Economic Review*, June, 1919, pp. 402–5. In a recent paper on "Absenteeism in Labor" (*Political Science Quarterly*, XXXIV, December, 1919, pp. 591–608) Mr. Douglas develops this general subject more fully.

X

It would seem from the foregoing discussion that the use of the pay-roll average is the worst possible method for arriving at the standard working force. The broken-time items of under-one-year or under-one-month service must be pieced together to show the amount of full-time employment (time put in plus absentee time). The best way to do this is to get the aggregate total of labor hours (or one-man hours) worked, add to that the number of hours of absentee employment, and divide the total by 3,000. The quotient is the number of 3,000-hour workers. The total number of labor hours might be divided by some other and locally determined figure, say 312, which might fall closer to the actual annual number of days worked by some particular plant. Here, however, its usefulness would end, for such a method would seriously discount the validity, if it did not make entirely impossible the comparison, of labor flux rates in different firms, localities, industries, or occupations. In other words, the only way to standardize labor turnover is to standardize it.

If labor hours are not recorded, the standard working force may be calculated by dividing the total number of man-days worked by 300. This number, which is practically equivalent to the average daily attendance, is slightly smaller than a standard which is based on included absentee hours and slightly larger than the number based exclusively upon labor hours actually worked, but the margin in both cases is believed to be negligible. The figure based exclusively on labor hours actually worked would seem at first glance to be identical with the average attendance method adopted at Rochester. It is actually somewhat smaller, because attendance records include some absentee time, inasmuch as they usually include those who may have been absent, say, during the last half of a day as if they had worked the whole day; whereas the labor-hours base contains only the time actually worked, standardized in terms of full-year units. At any rate, if labor hours are not available, the man-days worked, derived from attendance figures in most cases, constitute a perfectly workable and satisfactory substitute. Whether or not it is possible or desirable to include the absentee time, it is believed that the best method

is to proceed from the actual man-hours or man-days worked. Indeed, it is doubtful if as many plants keep actual attendance records as keep records of labor hours worked. A second alternative method which may be used in getting at the total labor hours is to use the pay-roll figures, dividing the amounts paid out at each hourly rate by that rate and adding the results to get the total number of labor hours. The suggested methods for determining the standard working force, then, are as follows, in the order of preference:

1. Given labor hours (or days):
   Aggregate labor hours ÷ 3000 (or 300)[1]
2. Given attendance records:
   (Average daily attendance × days of operation) ÷ 300
3. Given wage payments:
   Aggregate sum paid at each hourly rate ÷ corresponding rate per hour.

If the number of full-year workers has to be derived from labor days put in, or, what is practically the same thing, from attendance records, the method just given can be applied without modification only to the establishment which operates on the ten-hour day basis, the standard 3,000-hour worker being one whose full-time year is made up of 300 ten-hour days. If the plant operates on an eight-hour basis and there are, say, 4,000 man-days put in, these eight-hour man-days can easily be translated into their equivalent in ten-hour days by multiplying their number by 0.8. Similarly, if the 4,000 days had been worked on a twelve-hour day basis the 4,000 should be multiplied by 1.2.

XI

Having now fixed upon the number of replacements as most accurately measuring the net labor flux, that is to say, that part of the labor flux which is involved in maintenance, and having determined upon the equivalent number of 3,000-hour (or 300-day)

[1] The base as thus computed (resting on labor hours actually worked) is, as already noted, slightly smaller than the base derived under (2), since the latter method often involves such absentee time as results from absence, say, during a part of the afternoon. But if, under method (1), absentee time is added, the resultant base will be slightly larger than the base derived under (2), because the latter obviously includes only a part of the absentee time. It is evident that, under method (2), it is not possible certainly either to entirely include or to entirely exclude absentee time.

workers as the most accurate figure for the standard working force, it is quite obvious that the rate of labor flow is simply the ratio of the variable to the base. If the variable (number of replacements, e.g.,) is divided by the base (the number of 3,000-hour workers), the result is the rate of replacement for each 3,000-hour worker employed or, once the standard is defined, simply the replacement rate per full-year worker. If desired, a rate per 1,000 may be computed by dividing the replacement or flux figure by the number of 3,000-hour workers and multiplying the quotient by 1,000. The rate per single full-year worker, however, is believed to be in general preferable to the rate per 100 or per 1,000 full-year workers, and it has been used, therefore, in the present discussion.

Although the whole method suggested in these pages has its recipe in the phrase describing it (the rate of flux, replacement, accession, or separation per "equivalent full-year worker" employed), a formula will perhaps simplify its use.

Let h = the number of labor hours worked,
a = number of accessions,
s = number of separations,
and e = excess of separations over accessions.

Then the annual labor flux rate per full-year (3,000-hour) worker is

$$\frac{a+s}{h}\times 3{,}000,$$

the replacement rate $\frac{s-e}{h}\times 3{,}000,$

the accession rate $\frac{a}{h}\times 3{,}000,$

the separation rate $\frac{s}{h}\times 3{,}000,$

the labor increase rate $\frac{a-s}{h}\times 3{,}000,$

and the labor decrease rate $\frac{s-a}{h}\times 3{,}000.$

Obviously, if accessions and separations are equal or if the accessions are greater, there is no "excess of separations over accessions" and that factor in the replacement formula is eliminated. If it is

considered advisable to include absentee time with time worked to constitute the standard force, the number of absentee hours can simply be added to the number of labor hours worked and the formula applied as before. When the object is to indicate the changes in the labor flow without regard to its direction, it may be more useful to use the rate of labor flux instead of the replacement rate. These formulas may be applied to data covering various periods of time, a month or a year, etc., but the year should preferably be made the unit. They may, of course, be applied to occupational or departmental subdivisions of the working force, so far as the records make it possible to get the labor hours by occupations or departments. Within the same limitations they may be applied to sex groups. Since all rates are reduced to the standard unit, the full-year (or 3,000-hour) worker, establishments in Massachusetts can be compared with those in California and labor stability in mercantile establishments can be compared with stability in manufacturing establishments, and so on.

No single one of these rates, by itself, is sufficient accurately to measure the various factors which make up the labor mobility problem of a modern industrial establishment. Thus, e.g., the flux rate shows up the total stability situation but does not reveal the true establishment situation. If, for each equivalent full-year worker employed during any given period, two employees enter and two leave the establishment, there are evidently two complete overturns of the work force and the flux rate is, of course, 4.0 per full-year worker. This total labor change or flux rate of 4.0 may actually represent any one of three distinctly different internal establishment situations, the revelation of which is one of the useful functions of accession and separation rates: (1) accession rate 2.0, separation rate 2.0: a "going concern" which is neither expanding nor curtailing its operations; (2) accession rate 3.0, separation rate 1.0: a concern which is undergoing more or less rapid extension of plant; and (3) accession rate 1.0, separation rate 3.0: a concern which is curtailing activities. Any one of these three situations may prevail under the same flux rate. In this particular illustrative case it is a flux rate equivalent to two complete over-

turns of the work force, but one or another of these three different situations is involved in every flux rate, whether it be a rate of 1.0 in a very stable establishment or 9.0 in a highly unstable one.

The results of the various methods of computing turnover mentioned in these pages may be seen in a comparative way by applying them to the experience of some fairly typical establishment. There is such a concern in the Middle West engaged in the manufacture of automobiles. In this factory, during the month of March, 1919, there were put in 246,047 labor hours. The number hired during the month was 647 and the number of separations 396. No absentee time was reported. (1) The establishment figured its turnover as the ratio between the accessions and the average working force. The size of the latter was determined by dividing the labor hours worked during the month by the number of working hours in the month (235). The result is a so-called "turnover percentage" (in exact terms, a rate of accession per 100) of 741. On a single full-year worker basis this figure becomes 7.41. (2) On the basis of the Rochester formula, which used the ratio between separations and the average working force, the "turnover percentage" (separation rate per 100) appears to be 454. On a single full-year worker basis this figure would be 4.54. (3) On the basis proposed in this article it would be

$$396 \div \frac{246{,}047}{3{,}000} = 4.83$$

replacements per full-year worker, or a flux rate of

$$\frac{(647+396)}{\frac{246{,}047}{3{,}000}} = 12.72 \text{ per full-year worker.}$$

On a rate per 100 basis and using replacements, this would give a "turnover percentage" of 483. The effect of counting absentee hours as a part of the base is, of course, to decrease the rate of replacement indicated. The amount of this decrease is easily shown by a hypothetical case: Assume that the absentee hours in the automobile plant referred to amounted to 10 per cent of the

labor hours put in, or 24,605 hours. The introduction of this correction for 10 per cent of absentee time brings down the "turnover" or replacement rate from 4.83 to 4.39 per full-year worker.[1]

XII

The foregoing discussion has dealt only with the more direct method of measuring labor mobility—the simple measurement of its rate of flow in both directions. This, as we have seen, furnishes a good index of the extent of instability—the rate of labor flow—in any establishment as a whole or even in any subdivision (as to sex, department, or occupation) for which records of labor time and numbers entering and leaving are separately available. It is important to note that this direct measurement of labor flow in these labor groups shows the rate of flow for the group as a whole and gives no indications of the distribution of responsibility for the turnover within the group. The fact that there are in a year

[1] Since this was written, the Bureau of Labor Statistics has abandoned the Rochester formula as regards both base and variable. During 1919 it gradually took more and more into consideration the accession as well as the separation rate (to which the Employment Managers' Rochester formula is confined) and even made some use of flux and replacement rates. Also, instead of figuring the rate of labor change on the basis of the average number of employees on the work force (i.e., in attendance), the Bureau decided, first, to put it on the basis of the full-year (3,000-hour) worker and (with the object of getting labor mobility computation upon the same basis as that recently adopted for industrial accidents by the committee on statistics and compensation insurance cost of the International Association of Industrial Accident Boards and Commissions) now finally on the basis of the unit labor hour or some decimal multiple thereof. The accession rate, e.g., is a rate per 10,000 labor hours and is obtained by dividing the number of accessions in any period by the number of labor hours put in during that period and multiplying by 10,000. An accession rate per full-year (3,000-hour) worker of 1.0, which patently means that one man is hired for every (full-time) man on the force, is the same as a rate per 10,000 labor hours of 3.3. The rate per full-year worker is, obviously, more simple. Its rate figures indicate directly the relation between the size of the work force and the amount of flux and indicate at a glance whether the labor flux shown is equivalent to one, more than one, or less than one complete "overturn" of the work force. The Bureau's rates must be divided by 3.3 in order to put them on a comparable footing with rates computed on the equivalent-full-year-worker basis and so get them into direct relation to the standard work-force. Both methods have the advantage of being based directly upon the number of labor hours worked, instead of upon pay-roll. The gist of the new official method is explained in relation to the measurement of industrial accident rates in the *Monthly Labor Review* for January, 1920, pp. 218–19. See also "The Mobility of Labor in American Industry," by Emil Frankel and P. F. Brissenden, *Monthly Labor Review*, June, 1920.

2 replacements in smeltermens' jobs for every full-year smelterman employed in a smelter obviously does not mean that each smelterman worked only six months. Naturally many of them must have left after serving less than one month. And it is these short-time men who are primarily responsible for unnecessary labor shifting. In order to show the proportion in any working force or in any subdivision of a working force of, say, under-one-year men and over-one-year men it is necessary to classify employees (both those on the pay-roll and those who leave during any given time) according to the length of their continuous service. The results of such a classification of the employees of the smelter already mentioned is given in Table VI.

The table shows that 30 per cent of the smeltermen on the pay-roll June 1, 1918, had served more than five years. And yet the replacement rate among smeltermen as a whole was 2.3 per full-year smelter worker. This is partly accounted for by the fact that 55 per cent of the smeltermen on the pay-roll had served less than one year, and still more directly accounted for by the other fact that, of the smeltermen leaving service, 4 per cent had served more than five years, only 11 per cent over one year, and as large a proportion as 89 per cent had served less than one year. As to the general stability situation, the proportions shown in the upper and lower divisions of the rate and percentage columns of Table VI emphasize this fact: that it is the short-time employee who contributes the overwhelmingly greater proportion of the labor turnover. Of the number in service at the end of the year, only 9 per cent had service records of one week or less. On the other hand, 21 per cent of those who left during the year had been employed one week or less. At the other end of the scale it appears that 47 per cent of the active working forces had service records of more than one year, whereas only 11 per cent of those who left during the year had served more than a year. The one-to-two-year and the two-to-three-year groups indicate separation proportions of one-half and one-third their respective strengths in the active working force, while the under-one-week group, as already indicated, contributes a proportion of separations more than twice as great as its relative strength in the working force. This analysis is based on the reasonable assumption that the length-of-service

distribution of the active working force throughout the year studied does not vary to any great extent from the distribution found for the end of the year.

TABLE VI

NUMBER, PER CENT DISTRIBUTION, AND RATE PER FULL-YEAR SMELTER EMPLOYEE, OF ACTIVE AND SEPARATED SMELTER EMPLOYEES WHO HAD SERVED SPECIFIED PERIODS OF TIME†

	NUMBER WHO HAD SERVED EACH SPECIFIED PERIOD OF TIME	PER CENT DISTRIBUTION	RATE PER FULL-YEAR WORKER‡
	Active Employees		
One week or less	31	9	0.08
Over 1 to 2 weeks	17	5	0.04
Over 2 weeks to 1 month	16	5	0.04
Over 1 to 3 months	35	10	0.09
Over 3 to 6 months	28	8	0.07
Over 6 months to 1 year	60	18	0.15
Over 1 to 2 years	19	6	0.05
Over 2 to 3 years	19	6	0.05
Over 3 to 5 years	16	5	0.04
Over 5 years	101	30	0.26
Total	342	100	0.87
	Separated Employees		
One week or less	195	21	0.50
Over 1 to 2 weeks	112	12	0.29
Over 2 weeks to 1 month	165	18	0.42
Over 1 to 3 months	198	22	0.50
Over 3 to 6 months	93	10	0.24
Over 6 months to 1 year	55	6	0.14
Over 1 to 2 years	27	3	0.07
Over 2 to 3 years	16	2	0.04
Over 3 to 5 years	14	2	0.04
Over 5 years	38	4	0.10
Total	913	100	2.33

† See Table III of article on "Labor Turnover in a California Copper Mining and Smelting Company," *Monthly Labor Review*, May, 1919, p. 73.

‡ Based upon standard force of 391 equivalent full-year smeltermen.

The figures in Table VI fail adequately to convey the true situation. The principal difficulty with such a length-of-service classification as that shown in Table VI is that the service periods in the scale are of unequal length and the numbers of those leaving

during those unequal periods are, therefore, not strictly comparable. In Table VII the same set of length-of-service figures is presented in such a way as to make the necessary correction for this disparity between the different service periods. The first two columns are, except for decimals, identical with the corresponding figures for the active employees in Table VI. In column 4 the total number of equivalent full-year smelter workers employed (391) is distributed in the same percentage proportions as are the

TABLE VII

SEPARATION RATE PER FULL-YEAR SMELTER WORKER IN SPECIFIED LENGTH-OF-SERVICE GROUPS†

LENGTH OF SERVICE	EMPLOYEES ON PAY-ROLL AT END OF PERIOD		CORRESPONDING DISTRIBUTION OF EQUIVALENT FULL-YEAR WORKERS	SEPARATIONS	
	Number	Percentage Distribution		Number	Annual Rate per Full-Year Worker
1	2	3	4	5	6
One week or less	31	9.1	35.6	195	5.5
Over 1 to 2 weeks	17	5.0	19.6	112	5.7
Over 2 weeks to 1 month	16	4.7	18.4	165	9.0
Over 1 to 3 months	35	10.2	39.9	198	5.0
Over 3 to 6 months	28	8.2	32.1	93	2.9
Over 6 months to 1 year	60	17.5	68.4	55	0.8
Over 1 to 2 years	19	5.6	21.9	27	1.2
Over 2 to 3 years	19	5.6	21.9	16	0.7
Over 3 to 5 years	16	4.7	18.4	14	0.8
Over 5 years	101	29.5	115.3	38	0.3
Total	342	100.0	391.5	913	2.3

† Based on allocation of the total number of full-year workers among the different length-of-service groups.

342 smelter workers who were on the pay-roll at the end of the year. This reveals the number of full-year workers assignable to the various length of service groups. Column 5 is identical with the first column of separation figures in Table VI. In column 6 are given the annual rates of separation per full-year worker in each length-of-service group. These figures are obtained by dividing the number of separating employees who have served each specified time period by the number of equivalent full-year workers belonging to that group. The resulting scale of separation rates gives a very good idea of the relative responsibility for excessive labor mobility

of the different service groups and shows that the great bulk of it is caused by the short-time employee, very little of it, indeed, being due to the separation from service of employees who had served more than one year.

A more complete discussion of the uses of length-of-service statistics appeared in an article in the February, 1919, number of the *Monthly Labor Review*.[1] There were suggested in that article some modifications of the regular length-of-service classifications designed to show the average number of persons (both in service and separated) assignable, on the average, to each weekly subdivision of the several unequal service periods; to show, in other words, what was called the "average weekly number" leaving and the corresponding "average weekly" active service distribution. In the article just referred to, the length-of-service figures were also applied to the problem of showing the number of equivalent full-year jobs affected by turnover and the number of these affected jobs having various designated rates of replacement.[2] A similar analysis was made in a subsequent article on labor turnover in the California oil-refining industry.[3] The reader is referred to the two articles mentioned for a detailed discussion of this point.

One other method of measuring labor stability deserves notice. It is described in an article in the February number of the *Journal of Political Economy*.[4] It consists in the determination of the ratio between the number of workers actually employed and the number of equivalent full-time workers—called by the writer of the article the "number of available positions." This equivalent number of full-time workers is obtained by dividing the total number of hours actually worked "by the number of hours worked by one who is employed all the year round," which in turn is obtained by a roundabout process of eliminating days not worked in the locality,

[1] P. F. Brissenden, "Labor Turnover in the San Francisco Bay Region," *Monthly Labor Review*, February, 1919, pp. 45–62.

[2] *Monthly Labor Review*, February, 1919, pp. 59–62.

[3] P. F. Brissenden, "Labor Policies and Labor Turnover in the California Oil-Refining Industry," *Monthly Labor Review*, April, 1919, pp. 47–51.

[4] Boris Emmet, "The Nature and Computation of Labor Turnover," *Journal of Political Economy*, February, 1919, pp. 105–16.

absentee time, etc.[1] The number of workers actually employed is found by an actual census of the working force. The percentage excess of this number actually employed over the number of equivalent full-time workers is presented as the "percentage of turnover." This method does represent the extent of instability or turnover very accurately, but the method would be just as accurate and more useful if the base in the calculation (the equivalent number of full-time workers) were worked out more along the lines indicated in the foregoing pages. Moreover, it is to be noted that the method adopted for computing the time worked by a "fully employed person," while sufficiently accurate for the local group or establishment covered, is quite useless for purposes of comparison with other industries or localities. The number of equivalent full-year workers can be really standardized only by dividing the total labor hours by 3,000, or by some other standard employment unit which may be agreed upon. But even with these modifications, this method would seem to be of less practical value than the method of comparing the replacements with the standard force, because it does not show directly—as does the replacement method—the actual flow of labor in and out of the establishment. The greatest difficulty involved in Mr. Emmet's method is that very few concerns have records in such shape as to make it possible to work out the problem on the lines proposed without an enormous amount of work.

XIII

The establishment records primarily needed for the development of useful statistics of labor mobility on the lines indicated in the body of this article are:

1. Number of man-hours (or man-days) worked
   a) In the shape of clock records, or
   b) Daily attendance records, or
   c) To be derived from amounts paid out in wages at various rates
2. Number of accessions
3. Number of separations
   a) Number leaving voluntarily
   b) Number laid off
   c) Number discharged

[1] *Ibid.*, p. 107, note.

These items represent the most important data necessary. As to each item, the information should be recorded by months, and separately, so far as possible, for departmental, occupational, and other subdivisions of the working force. If absentee hours are to be included in the computation, a record of such absentee time will, of course, have to be kept. Indeed, such a record should be kept in any case and quite apart from the investigation of labor mobility, so that it may be possible to determine the establishment's percentage of absenteeism.

Length-of-service statistics are very important. If the individual service records are to be tabulated as a part of the establishment records, it would be well to agree upon some common standard classification of service periods. This classification should be split up very fine in the short-service end of the scale, at least to the extent of showing the number who have worked one week, or if possible even less. It should show separately active and separated employees and, as far as possible, the various departmental and occupational subdivisions of the working force.

PAUL F. BRISSENDEN

WASHINGTON, D.C.

THE CO-OPERATIVE MOVEMENT IN NEBRASKA

"Cut out the middleman." Thus runs the slogan adopted by a conference of representatives of farm and labor organizations held in Chicago a few weeks ago. Perhaps no one of the many suggestions for reducing the high cost of living is more popular or more prevalent at the present moment than this one which recommends the elimination of the middleman. The American Farm Bureau Federation, a national organization with executive committee members from Massachusetts to California, charges that the high prices paid by the consumer are altogether disproportionate to the prices received by the producer and that the middleman is the guilty party. Believing that it is hopeless to wait for governmental relief from "the merciless exploitation to which they are now subjected by the profiteers," the Plumb Plan League called an all-American farmer and labor co-operative commission to meet in Chicago February 12, 1920. At this meeting several hundred delegates from farmer organizations and various branches of the American Federation of Labor sought to institute a plan for direct dealing between farm producers and city consumers. The United States Council of National Defense, composed of the Secretaries of War, Navy, Interior, Agriculture, Commerce, and Labor, having made a careful investigation of the high-cost-of-living problem, recently reported to the public its findings and the remedies needed. The idea of co-operation is conspicuous in all of the proposals.

The economics of many current suggestions to "cut out the middleman" may be in error, but their psychological potency is manifestly great. Indeed, so great is the appeal of this slogan that many people seem willing to risk even a fundamental change in our economic system if such a change holds out any hope that the present stress may be relieved. No thinking person believes, of course, that a change of such magnitude as is comprehended in the phrase "the elimination of the middleman" could be effected at a single blow. But both those who believe that this suggestion

is founded upon sound economic theory and those who fear that it is not so founded are watching with intense interest its rapid spread. The most concrete manifestation of the rise and growth of this idea is to be found in the history of the co-operative movement and more particularly in its phenomenal spread during the years of the recent world-war.

The early history of co-operation in Nebraska centers around the Patrons of Husbandry, or the Grange, and the Farmers' Alliance. To be sure, commercial co-operation, in the sense in which the term is now employed, was rather incidental than fundamental to these early farmers' movements in Nebraska. However, many truly co-operative enterprises were begun, and some of them have survived the great movements of which they were but a part. Outside of the Grange, the Farmers' Alliance, and the Knights of Labor, too, many co-operative and partially co-operative enterprises were started. The term "co-operative" was also employed by many associations in which individuals joined hands and funds on the usual corporate basis with a view to mutual protection and profit. The history of most of these associations shows that in the various groups the stock became gradually concentrated in the hands of a few members until they lost such semblance of truly co-operative companies as they might have had and were withdrawn one by one from the ranks of the independents.

Mr. C. Vincent, manager of the Farmers' Grain Company of Omaha, pioneer member of the Omaha Grain Exchange, and formerly editor of the *Central Farmer*, states that "the first farmers' organization in Nebraska to embody the co-operative principles in its by-laws was located at Pleasanton in the fall of 1904." The by-laws of this company set a maximum of 8 per cent for dividends on stock and provided for the distribution of all other net earnings on the basis of patronage. Since 1904 the number of genuinely co-operative enterprises has grown rapidly and at an accelerating pace. The great majority of early companies were elevator or grain companies. But there were also many farmers' telephone companies and many stock-shipping associations. Co-operative mercantile establishments are of more recent growth

in Nebraska and are, in fact, having their great day just now. Many of the original grain and elevator companies gradually added lumber, coal, feed, implements, hardware, and merchandise, until today they are general supply stations for all the farmer's needs. A few have combined with this a mill, a creamery, or a general produce market. Many have added live-stock-shipping associations. The earlier companies were incorporated for a single purpose, usually for buying and selling grain, but nearly all of them have expanded beyond the original purpose. The tendency in more recently organized companies seems to be toward making the articles of incorporation more general and more inclusive, many of them taking in the whole field of "legitimate business."

What, then, is the status of co-operation in Nebraska today? According to Mr. L. S. Herron, editor of the *Nebraska Union Farmer*, there are at present 150 genuinely co-operative elevators in Nebraska which have been organized through Farmers' Union activity. He specifically states that "this does not comprise all of the truly co-operative elevators in the state—for a good many have been formed outside of the Farmers' Union movement." Between June 15 and September 15 last year the Farmers' Union organized forty elevators. Professor H. C. Filley of the rural economics department of the University of Nebraska places the present total of truly co-operative elevators in the state at 400. The 1918 Convention Book of the Nebraska Farmers' Co-operative Grain and Live Stock State Association lists the titles and officers of 418 companies. Numerous others are in process of organization. Professor Filley and officers of the Farmers' Union declare that they find it very difficult to respond to all the requests which come to them for assistance in organizing new companies. On the other hand, some local associations disband and go out of business without the knowledge of the central office. It is impossible, therefore, to state with the assurance of accuracy the exact number of co-operative grain companies in existence in Nebraska at the present moment. Professor Filley's estimate of 400 is without doubt very nearly correct.

Co-operative live-stock-shipping associations are second in number only to co-operative elevators and grain companies.

Mr. Herron states that there are about 170 Farmers' Union companies that ship live stock and that about one-fourth of these are organized for this single and specific purpose. The rest are elevator companies which also ship stock. Estimates vary on the number of Nebraska co-operative stores having distinct organization. Mr. Herron estimates that there are about 75 among the members of the Farmers' Union, Professor Filley that there are about 100 in all. According to the latest reports, 328 companies are buying some merchandise from the Farmers' Union State Exchange of Omaha, but many of these handle merchandise only as a side line. Members of the Nebraska Farmers' Union have established two large mills, one at Scribner and one at Snyder. Many elevator companies have installed "midget" mills. Two co-operative creameries are operated by Farmers' Union members, one at Fremont and one at Superior, and two more are in the process of organization at Beatrice and at Superior. At Scottsbluff there is a Farmers' Union Transfer and Storage Company capitalized at $100,000. At Gordon there is a Farmers' Union Potato Growers' Co-operative Association capitalized at $200,000.

A form of co-operative endeavor which has proved especially successful in Nebraska is mutual insurance. The *Nebraska Insurance Report* for 1918 shows that, during 1917, 73 farm and village mutual assessment fire and tornado insurance companies within Nebraska wrote risks aggregating $76,604,131 and that on January 1, 1918, these companies had in force policies totaling $402,803,078. In addition to these the report lists 15 mutual fire, tornado, and hail insurance companies which wrote in Nebraska, in 1917, $32,321,507 in policies and had in force in Nebraska on January 1, 1918, insurance totaling $71,258,003. Among the Nebraska companies the Farmers' Mutual Insurance Company of Nebraska is by far the largest. It claims also to be "the oldest, strongest, cheapest, and best purely farmers' mutual insurance company in Nebraska." It began business in 1891 with no capital stock and no dividends. It now has 35,000 members who elect the governing body of nine directors. When first organized, the company's rates on a combined farm policy were $40.00 per $1,000, then very reasonable. Since that time the rate has been gradually

decreased until at present the cost of such a combined policy is $12.50 per $1,000. Since its organization this company has paid out nearly $2,000,000 in losses, saved its members over $1,000,000 in premiums, according to current rates, and had on hand January 1, 1919, a surplus of $368,475. During the preceding year policies were written for $35,999,227 and on January 1, 1919, insurance in force totaled $213,956,783.

Besides the co-operative associations which own and operate elevators, stores, telephone lines, mills, or creameries, there are numerous organizations which do not give any such tangible evidence of their existence. Some of these are organized as sellers' associations, some as buyers' associations, and many as both producers and consumers. In these groups there is usually a secretary or manager who assists the members in combining their shipments of produce and their orders for goods into carload lots and in the disposing and distributing of the produce and the goods after shipment. Among these are at least two co-operative fruit-growers' associations, one at Omaha and one at Nebraska city. There are several co-operative cow-testing associations, and a number of cream-shipping associations.

There are also a few miscellaneous and unique instances of co-operation in Nebraska which can hardly be classified in any of the aforementioned groups. The Ben Hur Lodge of Omaha is reported to be conducting a co-operative store. During the waiters' strike in Omaha in September, 1919, the strikers opened a co-operative restaurant at 1415 Harney Street. Farmers near Champion, Nebraska, have filed with the Railway Commission an application for approval of a stock and bond issue wherewith to build a railroad from Benkelman, in Dundy County, to Champion, in Case County, a distance of 34.6 miles, including sidetracks. They have already organized as the Champion Valley Railroad Company, have had preliminary surveys and cost estimates made, and paid $10,000 for preliminary expenses. They claim that the present cost of getting their grain and produce to market will be materially reduced. Beet farmers near Scottsbluff, in the far western part of the state, are at present raising money for a co-operative sugar factory. They are of the opinion that this is the

only way in which they can get full and legitimate returns for their product. They further believe that the consumer will profit by this venture, particularly the consumer of Nebraska, who has been paying long-distance freight charges on sugar which has never been shipped. The many co-operative distributing organizations of the state will enable the factory to get its product to the consumer by the most direct and economical route. At their recent meeting in Lincoln, the Nebraska Honey Producers' Association discussed the possibilities of co-operative production and distribution of their product. Nebraska wool growers have pooled their 1920 crop and will put it on the market through one selling agency. The Nebraska Economy Campaign is enlisting the support of numerous organizations of all kinds, and in connection with this "work and save" movement the subject of co-operative buying is much discussed. Some organizations, such as the Lincoln Woman's Club, already have plans under way for buying co-operatively as a means of securing lower prices and of cutting down the cost of living.

A most interesting and unique instance of the utilization of co-operative principles is found in the history of the Consumers' League of Lincoln. A farmer came to the city in the fall of 1918 with a carload of potatoes and was offered fifty-four cents a bushel. Knowing that potatoes were selling at sixty cents a peck retail, he was unwilling to accept the offer and complained to the local food commissioner. He was told by the commissioner that if he would put his car at a certain point the potatoes would be sold for him at one dollar a bushel. Railroad men refused to "spot" the car but finally did so under orders from the food commissioner. The potatoes were sold without difficulty. A number of men who were interested in this venture organized as the Consumers' League and each deposited a one-hundred-dollar Liberty Bond to make up a security fund. This fund was never touched and not a dollar was ever borrowed. During the winter 16 cars of potatoes, 2 cars of apples, and 1 car of turnips were sold at cost. The Consumers' League disbanded in the spring of 1919. Similar car-lot shipments have since been received and distributed at the local freight yards by other organizations.

The Farmers' Educational and Co-operative Union, although it includes by no means all of the co-operative enterprises in Nebraska, is by far the biggest factor in the movement at present. From its humble beginning in a country schoolhouse in Rains County, Texas, in 1902, the Farmers' Union idea has spread over a large part of the United States. A local requires 15 or more members. Five or more locals may form a county union. When there are 5,000 members within a state, a charter may be secured for a state union. The national organization, the Farmers' Educational and Co-operative Union of America, comprises at present 26 state unions, which are represented in the national convention on a basis of one delegate for each 5,000 members.

The first union to be formed in Nebraska was Liberty Local No. 1 in Antelope County in 1911. In December, 1913, the state organization was completed in a convention held at Fremont. Since that time the growth in membership has been remarkably rapid, averaging about 5,000 a year until at present Nebraska has first rank among the state unions, with a membership of about 45,000 in about 1,500 locals. This, it is said, represents nearly the same number of families.

The Preamble to the constitution of the Nebraska union states that it was organized "in order to obtain a better and more direct market for all products of the farm, and to eliminate unnecessary expense in buying our supplies. . . . ."

Article ii of the constitution sets forth the purposes as follows:

> To secure equity, establish justice, and apply the Golden Rule.
>
> To discourage the credit and mortgage system.
>
> To buy and sell, and assist our fellow-members in buying and selling.
>
> To educate the agricultural classes in scientific farming.
>
> To teach the farmer the classification of crops, domestic economy, and the process of marketing.
>
> To systematize methods of production and distribution.
>
> To eliminate gambling in farm products by boards of trade and other speculators.
>
> To bring farming up to the standard of other industries and business enterprises.
>
> To secure and maintain uniform prices for grain, live stock, and other products of the farm.

Article v places limitations upon membership:

Section 1.—Any person above sixteen years of age, of industrious habits and of good moral character, who is a farmer, or a retired farmer, country mechanic, rural school teacher, physician, minister of the Gospel, or an employee of the Farmers' Union Co-operative Association may become a member of the Union. Persons engaging in banking, merchandising, practicing law or belonging to any trust or combine, or commercial club, engaged in any kind of speculation, shall not be eligible to membership in the Union. Provided, that ownership of bank stock, or holding the office of director, shall not be construed to mean banking.

The Farmers' Educational and Co-operative State Union of Nebraska comprises a state exchange, a live stock commission company, a co-operative insurance company, and publishes an official organ, *The Nebraska Union Farmer*. A central grain association is being planned. The general management of all these activities is vested in a board of seven directors elected by members from seven districts in the state. The Farmers' Union State Exchange, located in a six-story building in Omaha, is rapidly shifting from a retail to a wholesale basis. Although still selling at retail to those members who cannot be supplied in local Farmers' Union stores, the central association is expecting to become a purely wholesale institution in the near future. Besides carrying a general stock of dry goods, groceries, implements, hardware, automobile supplies, and furniture, the exchange has special departments which handle coal, salt, feed and hay, and produce.

In a letter to the writer, Frank Myers, manager of the Farmers' Union State Exchange, says, "It is our intention to have a Farmers' Union member at one end of every transaction. If we buy products of his farm, we sell on the open market to the highest bidder and we buy his supplies from whatever source quality can be secured and either ship them to him direct or through some one of our many co-operative associations throughout the state, we having at this time about three hundred and fifty associations in as many Nebraska towns. Business amounts to about three million dollars annually." The Farmers' Union Live Stock Commission Company markets the farmer's live stock and supplies him with stockers and feeders. Although denied a seat on the Live

Stock Exchange at South Omaha, this company is doing a business of $9,000,000 annually and ranks during different months from fifth to second among the 52 commission companies doing business at South Omaha. Two branches of this company are also proving successful, one at St. Joseph, Missouri, and one at Sioux City, Iowa. The Farmers' Union Co-operative Insurance Company insures buildings and personal property of Farmers' Union members. Its activity is mainly in western Nebraska, where mutual insurance has not been so highly developed as in the eastern part of the state. This company now has in force something over three million dollars' worth of insurance.

Before me is a statement of the condition of the Farmers' Co-operative Union of Oakland, Nebraska, for the year ending December 31, 1918. This particular local was organized in March, 1915, in a town of about 1,200 population. It now has a membership of 275 and a capital stock of $75,000. The report shows that, during 1918, 400 cars of produce and material were handled, business aggregating nearly $691,000 was transacted, and net gains of $8,833 were realized. From these gains 7 per cent was put into the surplus fund, and the remainder was prorated to members of the union on the basis of their business for the year. This typical report serves to give some idea of the nature and extent of the business conducted by Farmers' Union locals throughout the state.

The present position of security, influence, and favor held by the co-operative associations of Nebraska has not been attained without a severe struggle against many obstacles. Poverty, irregularity, and lack of thrift have hindered the growth of co-operation in some quarters. On the other hand, a high degree of prosperity, with its resulting fastidiousness and luxuriousness, has not been conducive to the growth of this movement. The greatest response seems to have come from those in medium circumstances. Skeptics have been many, and indifferents many more. Our highly developed individualism provides no such soil as the co-operative idea found in Europe. And many who have become interested have been so eager for immediate gain as to prove hindrances rather than helps to the co-operative movement

as a whole. For here, as elsewhere, success implies a long-time view and a willingness to wait for results, as opposed to a desire only for gains in the present moment.

But not all of the obstacles encountered were subjective and inherent in frail human nature. Practically every co-operative enterprise has entered a field of activity already occupied. Private owners and corporate companies have not encouraged the formation of co-operative societies nor given them much sympathy or aid during their periods of struggle. All of the means of competitive pressure have been brought to bear and many times the outcome has been fatal to the co-operators. Disgruntled merchants have influenced wholesalers to discriminate against co-operative stores and railroads have been charged with giving them far from impartial service. As recently as 1915 a serious obstacle to the growth of co-operation was met in the form of a railroad tariff which became effective on most Nebraska roads on October 25. This tariff established such limits on time for unloading, such charges for detention of cars, and such other provisions as to prohibit the use of cars and right of way for selling purposes. Although of general and equal applicability, the rule operated in effect as a discrimination in favor of merchants who sold at stores and delivered from the car, against those groups of buyers who had no regular established places of business. This rule provoked numerous complaints from groups which had been buying and selling directly in carload lots, for this practice of direct marketing had found great favor in many communities. The Nebraska State Railway Commission secured for the complainants an exemption of intrastate shipments from the operation of the tariff rule. In August, 1916, the Nebraska Farmers' Union and others filed a complaint praying that the exemption be extended to include interstate shipments. The Interstate Commerce Commission handed down on June 21, 1917, a decision which included this important statement: "Discrimination in according or withholding a car-peddling privilege is condemned and a distinction is made between car peddling and consolidated shipments to agents of granges and other farmer organizations." Peddling has been further defined to mean selling from the car. Thus the co-

operators who merely call at the car for goods previously ordered are not guilty of any violation of law and must be given this privilege by the railroads.

The most open and extended war of competition in Nebraska was that between the early farmers' grain companies and the Nebraska Grain Dealers' Association. Although the war had begun several years before, it was in the annual meeting of 1909 that the Grain Dealers' Association took special cognizance of the co-operative competition. The secretary said among other things: "The spirit of co-operation seems to be in the air. It might be likened unto a germ, that has produced an epidemic, which in spots is sweeping the country and which would appear to be directed particularly against the elevator interests, not only in your own state, but in all the grain-producing states, north, south, east, and west." Both sides secured press facilities and aired their grievances freely. The farmers accused the grain dealers of making exhorbitant charges and unreasonable profits. They claimed that in seeking to build elevators of their own they were denied sites on railroad rights of way. As conditions grew worse, there were charges of the theft of cars and reports of other conduct better left buried in the past.

Soon the co-operators found themselves shut out from the terminal markets by the refusal of the commission men to handle their grain. After a long fight they were able to secure representation on the Grain Exchange. Because they returned earnings to shippers they were accused of giving rebates and of violations of law. This long war was probably terminated by the 1919 legislature when it passed House Bill No. 345, which is incorporated into the statutes as chapter ccxxxiii, *Public Markets*. This law first defines as a public market every organization in the state which maintains a regular place of business in which members sell or exchange grain or other farm products. It then declares that every such market shall be open to all with equal rights and privileges, makes special mention of co-operative associations organized under the laws of Nebraska, and guarantees to these associations the right to distribute their profits to stockholders and members according to the constitution and by-laws under which

they are operating. The law further provides that any trading organization which fails to respect this right or otherwise violates the provisions of this act shall be declared a monopoly in restraint of trade and shall be punished accordingly. An effort to write the essential provisions of this law into the new Nebraska constitution met with opposition. Representatives of the grain exchange hold that if the farmers' organizations wish to distribute profits in their own special manner they should form their own exchange, as a mixture of exchange methods will inevitably wreck the institution.

Without doubt one of the severest obstacles to co-operation in Nebraska has been the classification of co-operative enterprises as corporations and their subjection to the constitutional provision on this point. Article xi*b*, section 5, of the Nebraska constitution says:

> The Legislature shall provide by law that in all elections for directors or managers of incorporated companies, every stockholder shall (have) the right to vote in person or proxy, for the number of shares of stock owned by him, for as many persons as there are directors or managers to be elected, or to cumulate said shares and give one candidate as many votes as the number of directors multiplied by the number of his shares of stock, shall equal, or to distribute them upon the same principle among as many candidates as he shall think fit, and such directors or managers shall not be elected in any other manner.

This article seems to be an open recognition of the principle set forth by William W. Cook who says: "At common law, in public or municipal corporations, each qualified elector has one vote, and only one. This was a natural rule, since each duly qualified citizen voted as a citizen and not as a holder of stock. But the same rule should not apply to private corporations. Stockholders are interested, not equally, but in proportion to the number of shares held by them. Naturally and reasonably each share should be entitled to one vote."[1] And again, "Generally the charter or statutes prescribe that each share of stock shall be entitled to one vote. And a statutory or charter provision to this effect applies not only to elections but also to all other questions

[1] William W. Cook, *A Treatise on the Law of Corporations Having a Capital Stock*, sixth edition (1918), Vol. II, chap. xxxvii, sec. 609.

that may come before the stockholders' meetings."[1] Cook then cites a Pennsylvania case in which "two-thirds of the stockholders" was interpreted as meaning two-thirds of the stock. He adds, "It has been held, however, that at common law each stockholder had but one vote, irrespective of the number of shares held by him. Where the statutes are silent on the subject, a by-law may give to each shareholder one vote for each share up to ten, and may fix the proportion of votes which he may cast in excess of that number."[2]

Obviously, as long as co-operative companies are classified as corporations subject to the terms of article xi*b*, they are unable to enforce the rule of "one man, one vote" which since the first formulation of principles by the Rochdale Pioneers has been considered vital to true co-operation. However, since these companies have been left to determine their own conditions of membership and to limit the holding of shares, they have had a means of evading what would otherwise have been a much more serious limitation upon their activity. Then, too, there has been nothing to hinder the members of these companies from abridging their own constitutional right to cast one vote for each share of stock held, and many have adopted the "one man, one vote" rule by mutual consent, trusting to a continuance of common interests and amicable relations to keep them out of the courts where this rule has had no standing.

Meanwhile there have been many arguments for an amendment which would make unnecessary these uncertain and unsatisfactory evasions. Professor H. C. Filley, who has made a most thoroughgoing study of the co-operative movement, says, "A constitutional amendment is necessary to guarantee to members of co-operative organizations full security in their voting rights." North Dakota in 1918, by a vote of 49,000 for to 32,000 against, added an amendment to its constitution which specifically covers this point. Article xxiii, section 135, of the North Dakota constitution says, "In all elections for directors or managers of a corporation, each member or shareholder may cast the whole number of his votes for one candidate or distribute them upon two or more candidates, as he may prefer; provided any co-operative corporation may adopt

[1] *Ibid.* [2] *Ibid.*

by-laws limiting the voting power of its stockholders." This amendment gives constitutional validity to a practice which has heretofore been carried on in some instances as an implied right. In Idaho, on the other hand, an amendment which would exempt co-operative companies from the rules of voting prescribed for corporations was defeated in 1917 by a vote of 12,000 for to 28,000 against.

Legislative enactment concerning co-operation in Nebraska has necessarily been limited by article xi*b* of the constitution. Chapter xiv, article xv of the revised statutes of Nebraska, 1913, deals with co-operative companies. This law defines and classifies co-operative companies as corporations but recognizes at least one co-operative principle, namely, the distribution of earnings on the basis of patronage instead of stock ownership. It provides that "any number of persons, not less than twenty-five, may be associated and incorporated for the co-operative transaction of any lawful business."

This old law has not been entirely satisfactory to the rapidly multiplying co-operatives of the state. Although it recognizes one of their fundamental principles, it continues to classify them as corporations and fails to grant them that degree of freedom to which they feel themselves entitled. There has been a growing sentiment for a more open and favorable recognition of their enterprises. Several attempts have been made to secure such recognition. In the session of 1915 a bill permitting co-operative companies to grant a patronage dividend to all patrons, regardless of membership, passed the House by a nearly unanimous vote but was killed in the Senate.

In opening the thirty-seventh session of the Nebraska legislature in the spring of 1919 Governor McKelvie spoke on this subject as follows:

> A more economical and efficient system for the distribution of agricultural products is highly important. The solution of this problem seems to be offered in a more complete co-operation among producers. Great strides have already been made in this direction and the movement should be encouraged by the removal of all barriers so that it may be carried to the terminal markets and to the live-stock and grain exchanges where co-operative effort may have an even advantage with all other forms of distribution. The organization of

co-operative societies should be aided and encouraged through the division of farm markets and marketing in the state Department of Agriculture, and the principle of one vote for each stockholder, as well as the distribution of benefits upon a basis of patronage, should be encouraged.

Senate Bill No. 128, introduced by Mr. C. Petrus Peterson, was finally passed by both houses and incorporated into the 1919 laws as chapter cxcvii: "An act relating to the organization and management of co-operative associations." Section 1 of this act defines co-operative companies in such a way as to recognize one of the fundamental principles of Rochdale co-operation, namely, the distribution of profits on the basis of patronage instead of on the basis of capital invested. Section 8 recognizes this principle again by providing specifically that "all surplus earnings shall be divided among and distributed to the membership on a basis of the patronage of the member with the association *and not otherwise.*" Section 2 removes co-operative companies from the class of corporations and thus from the constitutional limitations imposed upon them and classifies them as "limited partnerships," a form of organization not mentioned in the constitution. Section 6 recognizes another most vital principle of true co-operation in granting to each member equal voice in the selection of the board of managers. In his chapter already referred to, Cook says, "And a statutory or charter provision to this effect applies not only to elections but also to all other questions that may come before the stockholders' meetings."

What then does the present status of co-operation in Nebraska leave to be desired? Have not co-operators in this act all the guaranties necessary to insure their continued security and success? In so far as statutory enactment is a guaranty, it would seem that the genuinely vital principles desired and adhered to by co-operators have here been recognized and guaranteed. There are, of course, a number of secondary objections raised by co-operators which have not been met by this law. In section 1 and again in section 8 it is provided that net profits shall be distributed "to the membership" on a patronage basis. While accepting joyfully the patronage basis of distribution, many co-operators object to this limitation "to the membership," holding that a distribution

of dividends to all patrons is one of the main methods of recruiting members for the organization. People who cannot otherwise be induced to join can be added to the membership by a process of accumulating dividends until the total equals a share of stock or the individual is willing to pay the difference to gain the additional advantages of membership. The greatest of these advantages is perhaps the fact that dividends to members are usually twice as large as those to non-members. In practice this process of accumulating dividends for customers is sometimes carried on by the company regardless of its legality. No dividend is paid to the non-member until he is issued a share of stock and then, of course, he is no longer a non-member. Thus the terminology of the law may be evaded. A number of state laws make such evasion unnecessary by silence on this point, some by stating that this is to be arranged in the by-laws, and some by stating that non-members shall or may receive dividends, a few specifying that this shall be at one-half the rate paid to members. Iowa limits patronage dividends to members and employees, South Dakota to shareholders. Minnesota, North Dakota, Kansas, and Colorado leave this matter to be settled in by-laws.

Again, in placing the minimum number of persons who may organize a co-operative association at 25, the Nebraska law sets the highest minimum found in any of the states. Indiana is the only other state placing the minimum as high as 25. Provisions in other states range from 3 to 20, with 5 as the most common number, this being the number in nearly two-thirds of the states having co-operative laws. Three state laws on co-operation make no mention of a minimum number. Kansas with a minimum of 20 is the only state outside of Indiana and Nebraska requiring more than 10. Colorado sets a minimum of 10 and South Dakota of 5. Minnesota and North Dakota specify no minimum number.

In making co-operative companies subject to the "blue sky" law, the Nebraska statute has, it is claimed, placed them under a handicap. Until 1919 this law required that "the par value of all stocks sold or offered for sale must be one hundred dollars." Many co-operative companies have been forced to begin with very meager capital and this provision has left the stock of these com-

panies in a few hands instead of distributing it widely according to co-operative principles. This objection would seem to be entirely removed by the fact that the Blue Sky Law of 1919 contains no reference whatever to the size of shares. Only a very few of the state laws on co-operation include such limitation. Illinois places a minimum of $5 and a maximum of $100 on shares, Montana $10 and $5,000.

Many of the laws make illegal the use of the word "co-operative" unless the act in question has been complied with, make special provision for organizations prior to the law, and establish procedure for the dissolution of co-operative companies. Colorado, Michigan, and Washington each has two distinct laws, one for non-stock and one for capital-stock organizations.

In the foregoing respects the Nebraska co-operative law is or has been less liberal than the co-operative laws of some other states. In its provisions concerning powers of holding and transferring real estate, suing and being sued, the making of by-laws, the determination of conditions of membership, and the limiting of the liability of members, the Nebraska law is not very different from the other state laws on the subject. In providing for a minimum of 5 managers or directors the Nebraska law is identical with the laws of Iowa, Minnesota, Kansas, South Dakota, and North Dakota. And in certain respects the new Nebraska law is relatively liberal. Its definition of co-operative organizations as those "organized by producers or consumers or jointly by producers and consumers for the purpose of collective bargaining, marketing, or purchasing, or other co-operative business activity" is quite inclusive and comprehensive. The Iowa law permits any agricultural, dairy, mercantile, manufacturing, or mechanical business. The Kansas and South Dakota laws include also mining. The Minnesota law includes mercantile, manufacturing, and agricultural enterprises, to which North Dakota adds industrial. Colorado allows co-operators to engage in any lawful business.

In outlining the contents of the articles of incorporation the new Nebraska law aims to secure greater uniformity in these articles and to insure the inclusion of the vital facts in every case. The more specific requirement in this instance will probably work

to the advantage, not only of the state department, which must construe these articles, but also to the associations themselves. In providing for voting by proxy the Nebraska law is again relatively liberal. The Colorado law permits no proxy voting but says that voting by mail may be provided for in by-laws. The Iowa, South Dakota, and North Dakota laws provide for voting by mail and are silent on the subject of proxies. The Minnesota law of 1919 permits voting by mail but specifically denies the right of voting by proxy. The Kansas law is silent on both of these points. Some limitations imposed by other states are not found in the Nebraska law. Iowa, Minnesota, South Dakota, and North Dakota all place a maximum of $1,000 on stock owned by an individual in a co-operative company. Kansas places the maximum at 10 per cent of capital stock and Oregon at 20 per cent. Colorado leaves the limitation to be fixed in by-laws. Minnesota sets a limit on capital of $100,000 and Connecticut of $50,000. It may be said, then, that the 1919 Nebraska law on co-operation compares well with the laws of other states in its major and fundamental provisions.

But is the new 1919 law *the* Nebraska law on co-operation? The old law of the 1913 statutes is still in effect, as amended by chapter lvii of the 1919 laws. The amendments made are minor in character. The definition of co-operation remains identical. Thus, according to the old law, co-operative companies are still corporations and still subject to article xi*b* of the constitution. According to the new law of 1919 co-operators are not corporations but limited partnerships. Here, indeed, is a lawyer's tangle. A limited partnership, says Bouvier. is "a form of partnership created by statute in many states, wherein the liability of certain special partners, who contribute a specific amount of capital, is limited to the amount so contributed, while the general partners are jointly and severally responsible as in ordinary partnership." It will be noted that in section 4 and also in section 9 of the new law the liability of the individual member is limited to the amount of actual capital furnished by him. Limited partnership seems to be a rather new idea in Nebraska and little or nothing can be found on the subject as it applies here.

The object of this reclassification of co-operative companies seems to have been the defeat of a threatened movement to revoke the charters of co-operative companies in the state because, while classed as corporations, they were not keeping within the legal limits prescribed for corporations. Practically all of the co-operative companies of the state have been incorporated under the old law. Have they now automatically become limited partnerships or will they have to dissolve their organizations and begin life anew? It is the opinion of at least some lawyers that, in order to come under the provisions of the new law, each co-operative company will be compelled to end its corporate existence and file new articles of association. It will be noted also that the new law was approved April 3, 1919, whereas the amendments to the old law were approved April 11, 1919, eight days later. What effect would this discrepancy in dates have upon the court? No case has yet brought this peculiar situation to light. Have we two laws of co-operation, or one, or none? It would be presumptuous for one not deeply versed in legal lore even to hazard a guess.

What, then, are the prospects for the co-operative movement in Nebraska? A survey of the history of the movement and of its present status and rate of growth leads one naturally and logically to the conclusion that here is a mighty factor to be reckoned with in the future of the state and of the nation. The membership of grain and elevator companies will probably not continue to increase by such leaps and bounds as during the past few years, for the most populous part of the state is now pretty well organized. But the relative importance of these associations in marketing grain is likely to increase rapidly in the future. They now have a seat on the Grain Exchange at Omaha. Once represented in the terminal markets, who can predict the possible influence which they may have there? Consider also the possibilities ahead in other lines of co-operative production and marketing. Where there are now a few scattered co-operative mills and creameries, there may be thousands. Co-operative motor truck routes are already being suggested. As for consumers' co-operation, surely it is in its earliest infancy in this state as compared with the possibilities that lie before it. And there are doubtless many

other fields in which co-operative principles can be successfully applied. Governor McKelvie suggested one of these in his latest annual message when he said:

> There is need for cheaper money for the non-land-owning farmer who is industrious and honest, and whose security for loans is confined to chattels. In foreign lands and in some states in our own country, laws have been enacted which provide for the organization of co-operative credit societies. These societies enable communities or small groups of farmers to join their elements of credit for the benefit of those who need it. Thus is the honest, industrious farmer of small means given the advantage of larger credit and lower-priced money. I recommend such legislation for Nebraska.

Carrying out the governor's recommendation, the legislature passed an act dealing with co-operative credit associations, which was incorporated into the 1919 laws of Nebraska as chapter cxcviii. This act includes the same general provisions as chapter cxcvii on co-operative associations, together with certain additions and modifications. Fifteen persons may organize a co-operative credit association by duly filing articles of incorporation containing certain specified data. Credit associations are granted the usual corporate powers and are specifically authorized to borrow money, make loans, charge fees, impose fines, expel members, and "to exercise such incidental powers as shall be necessary for the conduct of business." All loans of more than fifty dollars must be secured. "No officer, director, or committee member shall be permitted to borrow from the association, except with the approval of a majority of the members present at a meeting, not less than a quorum attending, the notice of which meeting shall have stated that such loans or suretyship were to be considered."

Every association is required to provide a guaranty fund. Dividends are not to exceed the interest rate charged on the major part of the money loaned during the year. Members are liable for twice the amount of their stock. Directors and committees are charged with certain specific duties. An annual report must be made to the state banking board upon a form provided for this purpose and free access to the books of the association must be granted this board at all times.

It should be noted in this connection that the various bureaus of the United States Department of Agriculture, the state depart-

ments of agriculture, agricultural colleges, and experiment stations are all giving aid in the formation of new and the strengthening of old co-operative associations. In the face of these facts there can be little question as to the continuance and growth of co-operative credit and of the co-operative movement as a whole.

The co-operators do not confine their interests to commercial gain. "Saving money," says one of them, "is but an incident of co-operation. Its main purpose is to give better access to the necessities of life and to satisfy the larger intellectual and social needs." Again, "It is the aim of co-operation to render all the good things in life accessible to all." From the very first the co-operators have had before them this larger ideal. The Rochdale weavers set aside $2\frac{1}{2}$ per cent of their earnings for educational work; 5 per cent is a common minimum in present-day societies. Certain English associations appropriate as much as $10,000 annually for educational purposes. The earliest purpose of such a fund was naturally propaganda in favor of the society and the co-operative movement in general. As the need for this decreases, attention is turned to classes and lectures in history, economics, politics, and citizenship, as well as courses of special training for positions of trust in co-operative enterprises. Reading-rooms and libraries are established. Debating and discussion clubs are organized. Co-operative colleges are being spoken of. Social centers are maintained and appropriate recreation is provided for both old and young. In Nebraska, where the co-operative movement is young, the educational and social work has naturally not been developed to a very high degree. Co-operators are, however, proving themselves influential in the establishment of consolidated rural schools and are in many cases using these as social centers. Everywhere the attempt is made to inculcate the ideal of *ours* instead of *mine*, in the belief that a wider sense of possession will lead to a wider sense of responsibility.

Admitting that the future is bright for co-operative associations, some persons fear lest they will come to dominate the economic system entirely. The co-operators are often charged with having designs upon the present distributive system and are sometimes charged with having designs upon the present form of government.

Many co-operators would admit freely the first of these charges but probably none would admit the second. Accusations that they are as a body allied with the Non-Partisan League or with any other political party or movement are vigorously denied by the co-operators themselves. The Nebraska Farmers' Union, the Nebraska Farmers' Co-operative Grain and Live Stock Association, and other farmers' organizations have formulated programs for presentation to the legislature but have not entered into political campaigns. Individual co-operators may be Non-Partisan Leaguers, socialists, or what they will, but as a body they have thus far not organized on a political basis. Will they be guided by the early history of the Patrons of Husbandry and of the Farmers' Alliance in Nebraska or by the more recent and more successful political adventures in certain Canadian provinces? The recently launched Labor Party is extending a special invitation to co-operative and other farmers' organizations to affiliate with the trade unions on a platform of political, social, and industrial democracy. It is too early to predict whether or not this invitation will be accepted. Governor McKelvie does not confuse the co-operatives with any political organization. In a recent speech made in St. Louis he said in part:

> In Nebraska we offer relief to farmers in a way which, we believe, is economically correct. . . . . Our policy with the Nebraska farmer is one of co-operation, and this is the direct antithesis of state socialism. Our way allows the farmers themselves to control distribution. It gives individual initiative free play and equalizes opportunities for all. We promote the farmers' opportunity to get together, work together, and solve their own problems.

Built upon principles proved sound by time and experience, strong in numbers and spirit, backed by a reasonable constitution and law, the co-operative associations of Nebraska are assured of success.

MAURICE H. WESEEN

UNIVERSITY OF NEBRASKA

SOME FREQUENTLY NEGLECTED FACTORS IN THE INCIDENCE OF TAXATION

It is a commonplace of the theory of incidence that taxes on commodities which are competitively produced under conditions of constant cost rest ultimately on the consumers. But the assertion that taxes on commodities are paid by consumers in proportion to the quantities of taxed goods consumed by them does not mean, unless substantially all commodities are taxed, that the burden of taxation gets distributed among these consumers in proportion to their total expenditures, still less in any sort of proportion to their ability to spend. Thus, suppose commodity taxes to be levied only upon tobacco. Then they would be paid, in the last analysis, solely by tobacco users, who would thus be *discriminated against as compared with the rest of the community*. It used sometimes to be remarked by economists that "an old tax is a just tax," the theory being that in time men change their investments or their particular lines of work and thereby cause prices to become so adjusted as to distribute an old tax evenly. Thus, a tax on tobacco would cause a rise in the price of tobacco sufficient to keep labor and capital from withdrawing entirely or anything like entirely from the tobacco business. But it is to be noted that, so far as the *consumers* of tobacco are concerned, no such shifting of the burden is possible. Tobacco consumers are not in any one business but in all kinds of business. Even if they were, by chance, all in one kind of business, they could not avoid the tax by changing to some other business, but only by ceasing to purchase tobacco. And what is true of a tax on tobacco is true in varying degrees of a tax on any commodity or small group of commodities. For even if the tax is levied on an article consumed by all, there is no reason to suppose that the consumption of such an article will be necessarily in proportion to general consumption or to income.

It must not be supposed that, when one or a few commodities are taxed, consumers will be compensated for the increased prices

of the taxed goods by any reduction of the prices of other goods to the production of which the tax-displaced labor and capital are turned. For the labor and capital set free by the higher prices of and the consequent decreased demand for the taxed goods (or by the decreased buying of other goods in order to satisfy an inelastic demand for the goods taxed) will presumably be employed in producing the goods and services which the government buys with the revenue that the taxes yield. The tax diminishes the buying power of the individual; but it increases the buying power of the government.

The discussion leads naturally, at this point, into a consideration of the effect of taxation of commodities upon the general price-level. The increased price of any commodity due to a tax would probably, in practice, be so included in most index numbers as to make it appear that average prices were raised by such taxation. Yet in fact a price increase due to a tax is not properly a rise in the price of the commodity in question as a commodity. The tax is really paid for *additional* goods or services which are rendered by the government. In the process of buying the commodity and at the moment of purchase the buyer also pays for a government service. Without necessarily thereby subscribing to any "purchase" theory of taxation, we may nevertheless assert that the part of the so-called price of a taxed commodity which constitutes the tax might more properly be regarded, when the community is collectively considered, as the price of the government service or services for which it is levied. If an exactly equal tax were paid directly from income independently of any purchase, it would not be included in an index number of prices. If, then, a part of the income is turned over to the government on the occasion of the making of a purchase, the transaction may be logically regarded in the same way. In other words, taxation of commodities does not raise the price of the commodities *as such*, and high prices, so far as they are due to commodity taxation or its equivalent, ought to be sharply distinguished from high prices which result from money or credit inflation. Thus, an argument that wages or salaries should be raised because prices had risen might have much greater validity if the rise of prices had resulted from

inflation than if it had resulted from taxation of commodities. In the latter case the implication would be that the recipients of wages and salaries should be relieved, at the expense of their employers or of others, of the burden of taxes on commodities which the rest of the community had to pay.

There is another, though perhaps a minor, aspect of the problem of taxation in relation to average prices which is worth a moment's attention. Taxes on commodities, so far as they are shifted to consumers, involve the passing through several hands of the money which government requires. Thus government may collect from a manufacturer. The manufacturer reimburses himself by collecting from the wholesaler, the wholesaler by collecting from the retailer, and the retailer by collecting from the consumer. The indirect nature of the payment to government as compared with a direct payment from consumer to government means that the tax money, during its indirect passage from consumer to government is, in effect, temporarily taken out of circulation. This money is thus prevented from acting on prices as quickly and effectively as if it were paid directly to government by consumer and then spent by government. The several stages in the collection operate as increased trade transactions, and so, according to the quantity theory of money, tend to lower *average* prices, although the *taxed* goods are made higher in price by the tax. On the other hand, so far as a tax, by diverting producers out of a line in which their efficiency is highest, decreases the volume of goods produced, it operates to raise average prices.

Taxation of commodities burdens consumers the more exactly in proportion to their general consumption, the larger the number of consumable goods and services which are taxed and the more nearly these goods are taxed at the same ad valorem rate. Taxes on consumable goods lessen real incomes by raising prices. Taxes levied directly on incomes decrease directly the ability of consumers to purchase goods. But some persons accumulate capital by saving while others dissipate it by spending. Hence taxes on consumable goods would not be distributed either during any short period or in the long run in the same proportions among persons and classes as would taxes on money incomes.

It is generally recognized that taxes on commodities may, under certain circumstances, fall in part upon other persons than the consumers of the taxed commodities. Thus, such taxes may fall upon the economic rent of land used in the production of the goods, upon the return to the owners of capital in case the capital is immobile, upon entrepreneurs' profits, or upon wages. In the case of economic rent this fact has long been recognized. At a price higher by the full amount of the tax, demand for the commodity decreases. The amount sold cannot be the same as it would be without the tax unless the price is the same. The producer on the no-rent margin—if himself marginal between this and some other business—cannot or will not pay the tax and continue to produce the commodity. Marginal land used for the purpose will cease to be used. Other land will be used less intensively. But if demand is elastic and most of the supply is produced under conditions much more favorable than those at the margin, competition will prevent the price from rising as much as the tax and will force a reduction of rents. But the mere coexistence of elastic demand with production on land of different qualities (or of diminishing returns with more intensive use of land) will not of itself cause any appreciable part of the tax to fall upon economic rent. For land which is so far superior to marginal or no-rent land that its abandonment is almost unthinkable may nevertheless be so nearly as good for some other use that any potentially decreased return whatever to its owner, resulting from the tax, would cause it to be diverted to such other use. In order, therefore, that a tax on commodity should fall on economic rent, the following conditions must be coexistent: an elastic demand for the commodity; production on different grades of land or, if the land is all of the same grade, under conditions of diminishing returns with more intensive production; absence, as regards at least part, or, perhaps, most, of the land used, of alternative uses profitable enough so that the burden of the tax might make these other uses relatively desirable. It is probable that most economists are really aware of the necessity for the coexistence of all these conditions, but the conditions are not all ordinarily mentioned in current texts and discussions on the theory of incidence.

A tax on a commodity produced under the direction of entrepreneurs of widely different versatility may also fail to be shifted entirely upon consumers. In this case it may fall in part upon the entrepreneurs engaged in producing the taxed commodity. Those of the producers who can turn without appreciable loss in efficiency to other lines of production may do so. But those whose versatility is less, who would suffer a greater diminution in incomes by turning to other lines than by meeting a part or all of the tax, will be likely to remain, largely, in the industry in which they were engaged before the tax was levied. How far the tax will be a burden upon these entrepreneurs in the form of decreased money incomes and how far it will be shifted upon consumers in a higher price of the commodity taxed will depend, in great degree, upon the number of the entrepreneurs in this line who can easily and with little sacrifice change to other lines of production.

The reason here advanced for the conclusion that a tax on commodities may fall in part upon entrepreneurs' profits needs to be especially emphasized since it is not quite the reason currently given. The difficulty is in the concept of the "marginal" employer. The marginal employer is not necessarily the least efficient, an employer who makes next to nothing and lives largely at the expense of his friends, as Walker argues,[1] or the employer who lives by letting his capital depreciate, as Professor Seligman argues.[2] Such an employer may indeed be marginal between entrepreneurship and clerkship; but a very inefficient entrepreneur, if he would be still less efficient in a different capacity, is not marginal. For the present purpose, an entrepreneur's marginality is to be defined as Professor Davenport defines it.[3] In Professor Davenport's view, even the most efficient entrepreneur in any line, if he would be equally efficient (at the prevailing relation of prices) in some other line and would like the latter equally well, is marginal as between these two lines. No discussion of the theory of tax

[1] *Political Economy*, advanced course (New York: Holt, 1887), p. 239.

[2] *The Shifting and Incidence of Taxation*, third edition (New York: Columbia University Press, 1910), p. 235.

[3] *The Economics of Enterprise* (New York: Macmillan, 1913), pp. 73 and 77–82. Cf. the writer's *The Theory of Earned and Unearned Incomes* (Columbia, Missouri: Missouri Book Co., 1918), pp. 13 and 70.

incidence is entirely satisfactory which fails to take account of this view of marginality, since, if a tax in any way whatever contributes to diminish supply, it tends to raise prices.

It is seldom argued that a tax on a specific commodity may rest in part upon the wage-earners engaged in producing that commodity, as distinguished from the wage-earners who are consumers of it. Yet the theory of the shifting and incidence of taxation is not complete until a place has been made in it for this possibility also. For wage-earners, like entrepreneurs, differ in versatility, in capacity, and in taste. And it is at least conceivable that the wage-earners engaged in producing a given commodity may be in large part so relatively ill capacitated for or ill disposed toward other work that they can afford to bear the tax, or will prefer to bear the tax, in lower wages rather than to change to other occupations.

HARRY GUNNISON BROWN

UNIVERSITY OF MISSOURI

THE POLITICAL PROGRESS OF THE ENGLISH WORKINGMAN[1]

In common English parlance the term workingman has for some time been monopolized by the manual industrial worker. All others who will not be classified as gentlemen of leisure have had to find some other designation for their energies. They may be ministers or servants, assistants or laborers, but unless they drive a machine or handle a tool they are not workingmen.

How the industrial worker secured title to this simple and honorable appellation is a question which we can safely leave to the philologists. We are more concerned with the fellow whom it denotes. He has answered in his time to many names. Historically speaking he is the oldest kind of fellow on earth; or at least he is the kind of which we have the oldest record. He chipped the oldest stone implement in our museums, forged the oldest blade, molded the oldest pot. And the Lord alone knows how far behind these chance survivals of his handicraft his history ascends. To tell the whole story of his progress would involve telling the whole story of civilization, and nothing of that sort can be attempted here. Of his political progress the recorded tale is far briefer. It carries us, in England at any rate, no farther back than the Middle Ages, and most of it falls well within the compass of the last hundred years.

The medieval prototype of the modern industrial worker was the craftsman. He was then as he is now a townsman, though he certainly came from the country in the first place and he long preserved a healthy smell of the earth about him. It was in connection with the government of his town that he made his début into politics. At first he was a more or less accidental feature in an urban community mainly devoted to trade, a hewer of wood and a drawer of water for the merchants who ran the town in their own interests. Later as he grew in numbers he learned how to organize his strength and was able to contend with his masters for a share in the town government. In the long run he rather more than won his way, and long before the end of the Middle Ages

[1] Delivered on the occasion of the One Hundred and Fifteenth Convocation of the University of Chicago held in Leon Mandel Assembly Hall, March 16, 1920. Reprinted from the *University Record*, April, 1920.

he had become in the great majority of English towns the dominating element in municipal politics.

It is unfortunate that we know so little about this part of his history because it is clear from the results he achieved that he revealed early a capacity for politics of no mean dimensions. This much at least is certain that the original basis of his organization was industrial and that his political effort was directed through industrial channels. The English craft guild like the modern English trade union was not designed for political purposes, but like the trade union also, it could be made to serve.

In its early days the English craft guild furnished an excellent example of democracy in industry. It aimed to include everyone within the town who followed the same craft. Practically the only qualification for membership which it required was that of good workmanship. If apprentices and journeymen were not admitted to the full privileges of the guild it was merely because they were regarded as not having completed their technical education. Not every one of them eventually attained to the mastery of the craft. Not every Freshman for that matter gets his degree. But the assumption was that the apprentice would in time become a journeyman, and the journeyman in time a master. After all the only thing which really counted for much in medieval industry was handicraft skill. Capital was hardly necessary. The tools of the trade were few and cheap, power a matter of vigorous arms and legs, the shop a workman's bench in the front parlor and a sign above the street door. Given the technique, the equipment was easily found. And once an artisan was admitted to the guild the guild saw to it that he got his fair share of the local business. Equality of opportunity was one of the fundamental principles of its organization, and in the days when the market was limited by the town walls, when outside competition was rigorously excluded, when fashion was not the inconstant lady which she has since become, and when town populations just about held their own against plague, pestilence, and famine, equality of opportunity was not so hard to manage. The consequence was that the members of the craft stood upon almost an equal footing. Making allowances for individual variations in manual dexterity they all did much the same thing in much the same way. They purchased their raw material in the town market, manipulated it with the assistance of a few apprentices and journeymen in their little workshops, and sold the product over their counters. They were at once buyers and salesmen, shopkeepers and artisans, employers and workmen, owners and operatives. Since the prices at which they bought and the prices at which they sold, the wages they paid, the hours

they worked, and even the quantity and the quality of their finished products were all strictly regulated by guild ordinance, there was little play for competition and small chance for any craftsman to forge far ahead of his fellows. Very likely the system discouraged individual enterprise, but it made for equality and probably came as near to achieving a really democratic régime in industry as any system has ever come.

When such organizations began to interest themselves in local politics it was usually with a view to winning the municipal franchise for their own members. When they succeeded, and they generally did succeed, the master craftsman became the controlling element in the town government. No doubt he frequently abused his power in that narrow class spirit which has too often characterized the workingman in politics. But his very abuse of it proves how substantial his power was. Indeed it may be doubted whether he has ever since played so important a part in local government as he played in the early Middle Ages. When it is recalled that a large proportion of the members of the medieval House of Commons were delegates from the English towns it may even be asserted that his influence was not inconsiderable in national affairs.

Had England stood still where she was in the early Middle Ages, had the English towns preserved their splendid isolation, had roads not been built and commerce developed, had America and the Cape route to the Far East never been discovered, had the Renaissance failed to awaken men's minds and arouse their temporal ambitions, then the medieval craft guild might have survived unchanged to our own day, and many of the evils incidental to what we call industrial progress might have been avoided. But England moved before these powerful impulses along with all the rest of the Western world and the medieval craft guild moved with her. We need not call it progress, but we must certainly call it change. So far as the craftsman was concerned what affected him most were the increased facilities for trade. It enlarged his opportunities, opened to him a market for his commodities far beyond the limits of his town walls. This was a market which he could not control as he had controlled the town market, but one in which he was eager to compete. For such competition he found the guild organization rather a hindrance than a help. It hampered his action, restricted the free play of his individual enterprise and business acumen, limited his rate of progress to the pace of the slowest and stupidest of his confrères. Originally a fortress, it ultimately became a prison. And the consequence was that guild practices had to be modified and guild restrictions ignored.

For one thing the increasing complexities of the larger trade necessitated the distribution of the different parts of a business operation. It was no longer possible for the same craftsman to be at once a buyer, a manufacturer, and a merchant. Some, the more alert, became entrepreneurs, others, the less alert, remained at the bench to produce what another man would sell. The latter in fact became subservient to the former. In such wise from the democratic bosom of the craft guild differences and distinctions were born. While some of the abler masters ascended to the position of trading employers, others descended to a position hardly to be distinguished from that of wage-earners.

Furthermore, in proportion as the employer's interest in trade developed his interest in production as a guild monopoly diminished. He ceased to care much what particular group of craftsmen made his wares so long as they were made cheaply. Presently he discovered that there were workers outside the guild ranks altogether, country workers in fact, who could produce more cheaply. He began to draw upon them for his merchandise. And so he was instrumental in building up outside the town walls a competing source of supply. The guilds fought hard to retain their monopoly but in the long run had to confess defeat. Indeed many of their poorer members and many of their apprentices and journeymen went over to the enemy and moved to the country in order to take advantage of the freer conditions there. And the town authorities, alarmed at this wholesale exodus, took steps to prevent it by conniving at the breach of those very guild regulations which in an earlier time they had been at such pains to enforce. The outcome was that in the towns as in the country districts a large industrial class developed who were not only not guildsmen but who ignored the guild law. It is true that the guilds survived. Some of them indeed survive to the present day. But by the end of the seventeenth century English industry had in large measure escaped their confines and they had ceased to have more than a social significance.

Time does not serve to trace all the steps in the transformation of the craft guilds, but long before the factory had displaced the older industrial arrangements many of the characteristics of our modern industrial system had developed. The craft guild had become an association of employers, a permanent wage-earning class had emerged, and the old solidarity of medieval industry had made way for conflicts over wages, hours, and conditions of work which differed only in degree from those of our own day.

From the point of view of the workingman in politics the significance of all these changes lies in the fact that his political influence in the Middle Ages has been exerted through the medium of his craft guild. It was as a guildsman that he had come to dominate the town government and through the town government had been able to make his will felt in the deliberations of the national House of Commons. Exclusion from the guild meant, therefore, exclusion from any further share either in local or in national politics. The political power which the early guildsmen had won for the whole body of industrial workers became the monopoly of the small group which came to monopolize the craft organization. Town governments were converted into narrow class oligarchies and the voice of the towns in parliament became the voice of the merchant employers. The average industrial worker was reduced to a political nonentity. He lost every legitimate means of political expression. The only kind of political action left to him was rebellion. We should expect to discover that when conditions got too bad he did rebel; yet it would be hard to point to any considerable uprising in the whole history of England before the Industrial Revolution which drew its strength from industrial discontent. There were now and then local strikes in particular trades, there were apprentice riots against foreign workmen and there were probably industrial elements present in such agrarian disturbances as the Peasants' Revolt of 1381 and the anti-inclosure tumults of the sixteenth century, but broadly speaking the English workingman of those times seems to have accepted his fate without violent remonstrance. During the civil wars of the seventeenth century, when much which was hidden in normal times was made manifest, he did for a moment manage to voice his discontent. Then we hear the downtrodden London weavers expounding the social compact to their betters and the London iron founders invoking the "laws of God, of Nature, and of Nations" in support of their just rights. Then the Levellers, led by a quondam London apprentice, denounced alike the king and the Commons and presented a program of democratic reform which would have raised the industrial worker at once to political equality with his task masters. But it all served no purpose, at least no immediate purpose, so far as the seventeenth-century workingman was concerned. Two centuries later radical labor agitators were to draw inspiration from the pamphlets of the Levellers, and Chartists were to borrow some of their formulas. Immediately the democratic panaceas of the civil-war period left the industrial worker where it found him—the prey to his masters, a supernumerary in the body politic.

After all, if he did not lack the spirit, he lacked the strength to assert his rights. It must not be forgotten that he constituted a small minority of the population of seventeenth-century or even of eighteenth-century England. Notwithstanding remarkable industrial development under the Tudors, the Stuarts, and the early Hanoverians, England was still, at the beginning of the last century, unmistakably an agricultural community. The average Englishman was still a tiller of the soil and though industrial workers were far more numerous than they had been they were relatively few in numbers, and that few scattered and unorganized. The growth of country industry was in itself a disintegrating force, for it involved the destruction of that compact, urban solidarity which had been one of the chief characteristics of medieval industry and one of its chief political assets. It is true that the workingman after his exclusion from the guild formed associations for his own protection which were the forerunners of the modern trade union. Had these succeeded in combining their forces as they did in Germany in the *Gesellen-verbände* or in France in the *confrèries* they might perhaps have asserted themselves to some effect. As it was they were scarcely strong enough to hold their own in the face of guild opposition and could rarely accomplish so much as a successful local strike. Of political action they never dreamed.

If then we consider as a whole the political history of the workingman from the days when he first began to organize into craft guilds down to the days of the first factories we are forced to the conclusion that the last state of that man was worse than the first, that he did not progress, he went backward, that his political fortunes did not improve, they deteriorated. Possibly this was inevitable. We may if we like regard it as the run backward preliminary to the long leap forward. Anyway the fact is undeniable. We need not attempt to assign the blame, though it must appear that by and large the man who became the exploiting employer emerged from the same class as the man who became the downtrodden wage-earner. The earlier course of English industrial history on the whole supports the contention that the workingman is no more immune from the temptations of industrial prosperity than any other son of Adam.

About the middle of the eighteenth century there began in England that remarkable change in industrial technique which produced what we usually call the Industrial Revolution. Its general characteristics are sufficiently familiar. From the point of view of the workingman perhaps its most significant feature was the substitution of steam power for muscle power as the motive force in industry; for it was that substitution

which made possible the introduction of labor-saving machinery and changed the whole relation of the worker to his work. For one thing it tended to reduce the demand for his labor. One man with a machine could do what ten men had done before. For another it opened the door to new sources of labor supply. Women and even children could be utilized in the new processes to a degree never before dreamed of. To a considerable extent this increased labor supply was absorbed by the enormous expansion of industry occasioned by the Napoleonic Wars on the Continent. But even so there were more workers than there was work. This gave the employer the whip hand in the situation. He was able to exact long hours for low wages and so to reduce the earning capacity of the workingman to the level of a bare sustenance. Indeed, thanks to the public provision for the relief of the poor, he went even farther than that. After the so-called Speenhamland Act of 1785 the English local authorities practically guaranteed a certain minimum income to the workingman, based upon the size of his family and the price of corn. If he did not receive this minimum from his labors the balance was made up out of public funds. The employers often took advantage of this situation to pay their workers something less than a living wage and charged the deficit to the community at large. So extensive was this practice that it was estimated early in the nineteenth century that one-seventh of the population were in receipt of poor relief. This meant that the standard of living of the industrial worker was reduced to the lowest point compatible with keeping body and soul together. He was indeed hideously overworked, underfed, underclothed, and undersheltered. At the same time improper labor in the factory and in the mine was stunting the growth of his children and weakening the fecundity of his wife. The very circumstances which made his position intolerable robbed him of his strength to combat them.

From another point of view also the introduction of new machinery placed the workingman more completely than ever at the mercy of his employer. Under the old system the important factor in industry had been handicraft skill. The tools of trade had been simple and cheap, not inaccessible to the thrifty worker. Under the new system they were not only elaborate and expensive but they could not be run without the application of power which was more expensive still. No workingman could dream of furnishing himself with such equipment, nor could he on the other hand dream of competing against it with his old equipment. He had to work at another man's machine or he might as well not work at all. Of course if he did not work the machine could not run. But

that alternative was not in fact open to him. He had no accumulated resources upon which to subsist without working. The idleness of the machine might mean financial distress for the employer. For the worker it meant nothing less than starvation.

Yet from still another point of view the Industrial Revolution contributed mightily to the strength of the workingman and in the long run provided the means of his salvation. In the first place it greatly increased his numbers. If the initial effect of the introduction of labor-saving machinery was to reduce the number of available jobs, its ultimate effect by diminishing the costs of production was so greatly to increase the demand for manufactured commodities that English industrial activity expanded at a truly phenomenal rate. Probably the demand for industrial workers lagged behind the supply. Certainly the workingman got little of the profits from this enormous increase of business. But in any case the rapid development of industry drew to the great industrial centers a steady stream of immigrants which had the effect, in the course of the century, of converting smiling country England into the greatest industrial community on earth. At the beginning of the eighteenth century the industrial workers constituted a small and scattered minority of England's population. At the beginning of the twentieth century they constituted a large and a well-concentrated majority.

Probably the Industrial Revolution contributed as much to the strength of the workingman by concentrating his numbers as it did by increasing them. There was a great deal more to it than the introduction of the factory system, but certainly the development of the factory was one of its conspicuous features. The old industry had been in all its various changes a domestic industry. With a few interesting exceptions the workingman's home had been his workshop whether he worked for himself or for someone else. This arrangement had had its disadvantages even in the days when machines were driven by hand or foot power. The introduction of steam power made it impossible, for the only way in which steam power could be used economically was by employing one steam engine to drive a number of machines. That meant that machinery instead of being scattered over the countryside in peasants' cottages had to be arranged with reference to one common drive-shaft, in fact concentrated under one roof. Of necessity the concentration of the industrial workers followed. So we got the factory and around the factory the factory town. It was an ugly place, a dirty place, and an extremely unhealthy place. To the country immigrant it meant the loss of clean country air, of green fields and hedgerows, of primroses on

spring roadsides and skylarks in midsummer skies, and all these were grievous losses indeed. But it offered something pretty precious in exchange. It offered, in fact, human society. For the country life, notwithstanding all its charms, was a lonely and an isolated life, while the city life, for all its grime and misery, was teeming with social opportunity. The city brought men together who had never been together before. It provided contact between mind and mind. It made good schools possible; it made cheap newspapers possible; it made evening conferences on front doorsteps possible. Most important of all, it made industrial and political organization possible. And the discipline of the factory itself, harsh though it was, contributed to the same end. Men long accustomed to work by themselves learned perforce how to work together. They discovered the value and the strength of co-operative effort. They developed *esprit de corps*. From this point of view the Industrial Revolution was a great constructive force both in society and in politics. By drawing great numbers of men together it created out of countless scattered individuals compact communities, united by their work, united by the proximity of their living, united in their scanty pleasures, united above all in their common miseries. Perhaps these results could have been achieved by other less painful methods. But it is doubtful whether they could have been achieved anything like so rapidly. On that account it may well be questioned whether the Industrial Revolution did the workingman as much harm as it did him good, or to state the matter more broadly, whether these seething cauldrons of social corruption and social energy which we call great industrial centers have not, in the general reckoning of human progress, been worth all that they have cost.

This much the Industrial Revolution assuredly did for the English workingman: it defined in unmistakable terms his grievances and it organized his strength to redress them. The grievances were the familiar ones—long hours and short wages. The organization at first naturally followed the lines laid down by the miserable wage-earners under the old régime—combinations of workers by trades. But progress was slow in organization because, when these feeble trade unions appealed to the government to redress their grievances they spoke to deaf ears, when they resorted to the alternative of the strike they broke the law. They did worse than break the law; they provoked the enactment of a new and more stringent law. In 1799 the employers were able to secure the passage of an act in Parliament forbidding the workingman to combine for higher wages or shorter hours, forbidding him to attend any meeting designed for

those purposes, forbidding him even to converse about such matters with his fellows. And that law remained on the statute books for twenty-five years. During that period though it did not altogether destroy the trade unions it effectually prevented their use as an instrument for the redress of industrial grievances. Indirectly it had a great deal to do with forcing the workingman to interest himself in politics, because it made clear to him that so long as political power remained a monopoly of the employing class the whole force of the law would be ranged upon the side of his exploiters.

It may seem surprising that up to this time no mention has been made of the general progress of political reform in England. That there was progress is undoubted, progress of the greatest importance to the workingman as well as to every other Englishman. But that the workingman as such contributed to it or played any very conscious part in it is more than doubtful. In the great seventeenth-century struggle between the crown and Parliament he was at most a helpless spectator with small prospect of immediate gain whichever side won. The Revolution of 1688 was accomplished without reference to him and, except in so far as his religious life was concerned, without direct relation to him. The rise of the cabinet in the eighteenth century took place in the clouds above his head. All these momentous changes were indispensable preliminaries to the democratization of the English government in the nineteenth century. They formed part of the precious political inheritance of the English workingman, but they came in the days before he entered the political scene.

There was, however, another movement for political reform in England which developed contemporaneously with the Industrial Revolution in which the workingman did play a part. This movement received its impulse in part from America and in part from the writings of the French political philosophers. It proceeded from the governing classes themselves, was not at all radical in its purposes, and it approached the venerable edifice of the English constitution with a reverence akin to idolatry. But it did admit the possibility of improvement and even advocated moderate changes in the direction of enlarging the representative character of the House of Commons.

With the outbreak of the French Revolution this reforming spirit was quickened and to some extent it was changed. It became rather more doctrinaire in character and lost something of its respect for prescriptive right. But except in a few instances it never drifted far from its ancient moorings. During the early days of the Revolution it expressed

itself in the organization of reform societies designed to agitate for such moderate changes in the English constitution as would bring it into closer accord with the principles enunciated in the American Declaration of Independence and the French Bill of Rights. Most of these societies were middle- and upper-class affairs recruited from among men who were already voters. But there was one of another order. Its founder was Thomas Hardy, a master-shoemaker who kept a shop in Piccadilly. Hardy's first notion was to form a society of the unrepresented masses. Later he enlarged his plan so as to exclude no one who was not physically or morally unfit. But by fixing the membership fees at a penny a week he left the door open for the workingmen, and workingmen came in in large numbers. This so-called London Corresponding Society was not the only one of its kind. There was another founded in Sheffield in 1791 by a few mechanics, which numbered at one time 2,400 members. And there were at least twenty or thirty others. Most of what is known about these popular organizations has been gathered from the testimony of their enemies. But it is clear enough that they set themselves resolutely against violent methods. Though they advocated an extension of the franchise to the working classes and a redistribution of parliamentary districts in accordance with the distribution of population, they proposed no more than could be secured by peaceful and constitutional courses. The only revolution which they desired was, in Wellington's famous phrase, "revolution by due process of law."

From the point of view of the political progress of the workingman the interesting thing about these popular societies is that they represent practically the first organized attempt by the modern workingman to secure a place for himself in the English body politic. How widespread the movement was it is difficult to say. Hardy at one time estimated the total membership of the London Corresponding Society at 20,000, but it is doubtful if it ever numbered half that many. Of the other popular societies scattered throughout England not even the wildest guess at their numbers is possible. This much, however, may be said on the authority of Francis Place, who probably knew more about the matter than anyone else, "that vast numbers of the thinking part of the working people joined the London Corresponding Society as they did other reforming Societies in various parts of England."

There is very little evidence to show any connection between the economic grievances of industrial workers and their political activity at this time, and none at all to connect their political clubs with their trade unions. No doubt they entertained hopes that political reform

would improve their lot. Who does not? But the impulses which directly provoked their interest in these matters appear to have been in the main the same as those which prompted their superiors. There is no appreciable difference between the program of a democratic club like the London Corresponding Society and that of an aristocratic club like the Friends of the People. Both alike were stirred less by considerations of necessity or of expediency than by principles of abstract justice. Both indorsed with equal enthusiasm the French Rights of Man. Both for the time forsook their stations in the social and economic order and stood together on the broad generous platform of Liberty, Equality, and Fraternity. It is to the great glory of them both that this was so, and one of the most hopeful signs of the times.

Unfortunately, however, this reform movement was destined to a very short life. At first the French Revolution had been acclaimed with enthusiasm in England. Many Englishmen regarded it as an attempt on the part of the French people to remodel their absolute government upon the English pattern. And the course of affairs in France up to June of 1791 on the whole justified that view of the matter. After that the increasing radicalism of the French movement alienated English sympathy. And in something like the way in which English sentiment toward Russia during the late war changed from enthusiastic indorsement of the overthrow of Czardom to universal condemnation of the Bolshevik régime, so it changed in the 1790's toward France as the program of Mirabeau and Lafayette gave place to the program of Danton and Robespierre. Already in 1790 Edmund Burke had thundered forth his famous defense of prescriptive right against the untested innovations from across the channel, and when war broke out against France in 1793 the great mass of English people, irrespective of class, followed Burke's lead. Political reform became at once associated in the popular mind with French propaganda and received in consequence short shrift. The government began a systematic persecution of the reform clubs; but though government agents were active, they were no more active than popular fury. One has only to recall the raging mobs which destroyed Priestly's laboratory in Birmingham and laid siege to Dr. Parr's library at Norwich to appreciate how completely the government's policy reflected the sentiments of the vulgar multitude. The cause of parliamentary reform was in fact put *hors de combat* for a whole generation to come. Of the reformers some were let off with a warning, many were tried for treason, one or two were executed, a few sent to drag out the weary residue of their days at Botany Bay. By and large the working-class leaders

suffered most severely. Hardy himself escaped the law, but he was not able to elude the mob. They attacked his house, broke his windows, and literally frightened his wife to death. His business was ruined and he spent the declining years of his life in abject poverty. As for the workingmen's reform clubs they all came to an inglorious end during the last five years of the century. As the initial effort of the English workingman in modern politics they deserve more attention than they have received, but so far as any practical results were concerned they accomplished nothing.

It is easy to abuse the governing classes for their intolerance, during these times, toward the feeble efforts of the workingman after better things political and industrial, but it must be remembered that they were times of war, that England was fighting for her very life against the greatest military genius that the world has perhaps ever seen, and that any movement calculated to distract her efforts from that grim business savored strongly of disloyalty if not of treason. Perhaps the employing classes exploited this war spirit for their own purposes, but we should not make the mistake of assuming that they called it forth. We know by experience how tense and intolerant the popular mind becomes under the strain of war and how apt it is to call bad names and to do cruel things. We have had our modern equivalents for the opprobrious terms which were hurled at our democratic forefathers who dared to speak of liberty in the heat of the fight. For that reason we can perhaps understand and to some extent even sympathize with those repressive measures which the English government in Napoleon's day thought it necessary to take.

CONYERS READ

UNIVERSITY OF CHICAGO

[*To be continued*]

BOOK REVIEWS AND NOTICES

The Place of Science in Modern Civilization. By THORSTEIN VEBLEN. New York: B. W. Huebsch, 1919. Pp. 509. $3.00.

This is a collection of papers published in "various periodicals, running over a period of about twenty years." No high degree of unity is, of course, to be expected in such a compendium. The arrangement of the essays, however, departing widely from the chronological order, shows a fairly successful effort to present a more or less sequential development of Mr. Veblen's economic philosophy. A publisher's note indicates that the author of the essays reprinted in this volume has had nothing to do with their appearance in book form. No editorial work appears to have been done on them—a crude blunder in mathematical reasoning, with a rather elaborate footnote thereon, is reproduced on page 212—and no index has been prepared.

The first two essays deal with the theme of the title and develop a parallelism, along the lines of economic determinism, between the evolution of the scientific interest and of the general structure of society. This discussion may be viewed as introductory to the main theme of the book, which is presented in the next four essays, on economics as an evolutionary science and the philosophical preconceptions of economics (pp. 56–179). Various aspects of this theme are elaborated in the subsequent essays, which include discussions of the economic systems of Clark and Schmoller and of socialism. The last three papers are extraneous, dealing with racial and cultural history.

"Scientific satire" may be said to form the keynote of this book, as of most of what Mr. Veblen writes. And as the cynic trod on Plato's pride with another pride, the iconoclast breaks idols with other idols. If his opponents romance under the cloak of science, Mr. Veblen satirizes in the same guise. To say that there is as much pose and prepossession in Mr. Veblen's attitude as in the work which he criticizes is to state the case mildly. The main concern of the author is to extirpate all moralizing from economics and reduce it to a "science." His scorn is heaped on "normality" in all its forms. In the sense of separating science from moralizing, it must be admitted that there is no worthier or more needful task. The two things have been mixed badly

and to the grave disadvantage of both in the past, and no one will gainsay the valuable work which Mr. Veblen has done, in spite of extremism and a malicious sense of humor, in bringing the discussion of economic principles down to the often stern and unlovely facts.

But there are serious difficulties in the way of a "scientific" treatment of economics, over which Mr. Veblen does not help us, and many of which he does not see. A keen critic, he is not a close or clear thinker; destructively valuable, we can hardly follow him as a constructive leader. Thus in case of his favorite philosophical idea, the distinction between Hegelian and Darwinian evolutionary categories, often one cannot tell just what he means or on which side he is. In the second and third essays of the volume, Darwinism is characterized as the replacement of a teleological interpretation of phenomena by a matter-of-fact view. But in the essay on Schmoller (especially pp. 262, 265) Darwinism represents insistence on real causes, while Hegelianism is identified with empiricism. Again in the third essay we are told (p. 77) that economics must be a "theory of a cumulative sequence of economic institutions, stated in terms of the process itself." This sounds much like the "self-realizing life process" which is disparaged on page 259, and the only visible alternative is the fatuous empiricism damned with ridicule on page 262. There is obscurity and confusion of issues here. The author does not seem to recognize the familiar fact that objective science knows nothing about causes in any other sense than empirical uniformity. The difference between a "fatuous empiricism" and science is that the latter is an analytic and quantitative empiricism; outside this realm we can appeal only to an unscientific immanent teleology or else to a wholly irrational "creative evolution." (It is noteworthy that even mechanistic biologists are compelled to use teleology, and that they are merely dogmatic, in the present state of science, in insisting that it is not final.) The author's treatment of human nature is also replete with obscurity and ambiguity. Man is now a constant, now a variable; now in the causal sequence, now outside of it; sometimes the reference seems to be to a free personality, sometimes to instincts, and sometimes (apparently oftenest) to *mores*.

The most serious defect of the Veblenian philosophy comes out in the contrast between pecuniary and industrial employments, of which so much is made. (See especially pp. 279–323). Again it is not clear just what is meant by the terms. The simplest and apparently the correct view is that industrial values mean those of which the author approves and pecuniary values those of which he disapproves. As to

the reasons, grounds, or standards of this approval and disapproval, he does not find it pertinent to make a statement. It may be suggested that the "industrial" values are those which have an "alimentary or nutritive" character (pp. 90, 91) or which represent satisfaction of man's "natural" wants (p. 128), while the "pecuniary" serve only to "keep up appearances" (p. 399). But in the first place even alimentation is heterogeneous and not susceptible of accurate measurement. And if by "keeping up appearances" is meant the aesthetic side of life, still greater difficulties supervene. Under this interpretation the estimate (p. 399) that half our productive effort goes into this field is far too small; nine-tenths would be nearer the truth. But we doubt if Mr. Veblen would abolish all these gratifications, which make up the difference between human and brute life. He doubtless means to disapprove only of keeping up appearances in "improper" ways, which is to say, in ways of which he disapproves. If he has an objective test for distinguishing between valid and false aesthetic values (and equating the innumerable kinds) he does the world grievous wrong in withholding it from publication.

It goes without saying that there is a great deal in this distinction between real value and trumpery, but we wish to remark that it is a canon very difficult to apply—in a democracy! Other leading ideas in the book invite criticism, but space limits forbid. The essays are all interesting and intellectually stimulating and well worth making available in this permanent, convenient form. It is a good piece of book-making and all thoughtful students of social problems, whether or not admirers of Mr. Veblen, will find it a handy compendium.

F. H. KNIGHT

THE STATE UNIVERSITY OF IOWA

An Introduction to the Industrial History of England. By ABBOTT PAYSON USHER, PH.D., assistant professor of economics, Cornell University. Houghton Mifflin Co., 1920. $2.50.

This book is best described as a series of critical essays on topics of industrial history, mainly English, arranged in chronological order. The author devotes a preliminary chapter to an exact definition of the terms of industrial organization—factory, craft, wage system, putting-out system, sweating system, and the like. The second and third chapters discuss in the light of his definitions the industrial organization of the ancient world and its development in the French medieval craft guilds.

This serves as his transition to English history proper. Here, in the period prior to 1750, are chapters on population movements, the manor, inclosures, the towns, the guilds, and the woolen industries. In the later age he treats the East India Company and the cotton industry, the development of the metal industry, the factory system, collective bargaining, public health, railways, monopolies, and social legislation.

Running through these various chapter essays one finds the thesis that the Socialist law of industrial evolution is inaccurate and misleading. Thus Professor Usher establishes the fact that slavery in the ancient world was partly, at least, a form of capitalist enterprise, and that throughout the Middle Ages there was a steady growth toward capitalism based on free labor. In a somewhat different connection his analysis of the Industrial Revolution is interesting, including the elements of change in the relation of industry and agriculture, readjustment in the textile trades due to the use of the cotton industry, and the increased importance of the metal industries. This is very different from ascribing it on the one hand solely to the new inventions, or on the other to the discovery of the factory system of production.

The book shows throughout the discriminatory use of the latest available results of research and much painstaking original work. Of especial interest are the maps of population density at five dates between 1086 and 1700, and the three maps of railway development, 1843 to 1885. The numerous illustrations intended to explain technical developments in industrial processes fulfil their mission. The care with which the textile industries are described in terms of their technical processes is especially refreshing after the vague generalizations that ordinarily do duty on that subject in industrial histories.

The book, however, in the view of the present reviewer, hardly attains the end proposed by the author—a textbook for college students beginning economic history. The controversial treatment, the careful qualification in discussion, as well as occasional heaviness in style, make the book unsuited for an undergraduate text. Chapters in it could well be assigned for outside reading. The author's modest hope that the critical references will be of use to graduate students will be realized. The book may well serve as a mental stimulus to graduates and advanced undergraduates. Moreover, the writers of undergraduate texts will glean material from its pages and thereby secure more profit than Professor Usher, it is to be feared, will gain from his work.

THEODORE C. PEASE

UNIVERSITY OF ILLINOIS

Commercial Research, An Outline of Commercial Principles. By C. S. DUNCAN. Macmillan Co., 1919.

The reviewer wishes to express his unqualified approval of Mr. Duncan's idea of presenting to students and to the public a volume in which are discussed the needs for scientific commercial research, as its nature, methods, and organization. Business research, as distinguished from research in the field of production, means marketing research, because, as he says, "the beginning and the end of every enterprise is a marketing problem." As the author states in his Preface, his first proposition is to convince the reader of the need of business research in order to provide business facts for intelligent direction and control. Among students of economic and business problems conviction upon the matter is not difficult to obtain. But Mr. Duncan has taken upon himself the task of "selling" the proposition to the public. It was to be expected that the work would be longer and contain more illustrative material than would be necessary were it proposed to confine its message to the trained student. There can be no doubt that commercial research must be "sold" to business men generally before its widespread adoption will bring about more efficient distribution.

The different fields for business research are treated under the heading "Character of Commercial Research." Concrete problems, in the solution of which commercial research may be helpful, are suggested with a view to the needs of the manufacturer, the wholesaler, and the retailer. The chapter upon the sources of business facts suggests numerous sources, such as sales records, purchasing records, and other statistics to be secured from accounting data, governmental sources, trade journals, and reference books. In examining the character of business facts, the author introduces what he characterizes later as the three fundamentals of business analysis, namely, analysis of the commodity, analysis of the market, and analysis of trade organization. The distinction is made between precise facts and estimated values. In the treatment of methods of collection and presentation of business facts are offered many interesting instances and suggestions for the adaptation to business problems of principles which are familiar to the student of economics and statistics. Chapter x upon the organization of research contains an interesting description of forms of organization now in operation in more advanced business concerns. The concluding chapter of the work is one of general nature,

in which the need for development of commercial research is again set forth.

Commercial Research has been logically developed. The use of much more or less familiar illustrative material, though unnecessary for the trained student, is valuable in appealing to the business public, for whom the book seems to have been written, if one may judge from its semi-popular style. Mr. Duncan is to be congratulated upon entering this new field with such a work. His book is to be welcomed as a great aid in bringing about that desirable condition of business in which guesswork will be reduced to a minimum.

HARRY R. TOSDAL

BOSTON UNIVERSITY

The Company of Royal Adventurers Trading into Africa. By GEORGE FREDERICK ZOOK. (Reprinted from the *Journal of Negro History*, Vol. IV, No. 2, April, 1919.) Lancaster, Pennsylvania: New Era Publishing Co., 1919.

Dr. Zook is a laborer in the comparatively new field of the history of the minor English trading companies. The Company of Royal Adventurers was one of the shortest-lived of these and is of importance chiefly as precursor of the Royal African Company, of which Dr. Zook promises us a study in due season.

The Company of Royal Adventurers was one of the fruits of the cavalier interest in commercial activity following the Stuart Restoration. Founded in 1660 to hunt gold on the west coast of Africa it speedily found black men more profitable than gold, and traded them to the new English sugar plantations in the West Indies for silver and sugar and mortgages on the colonial estates. We shall have to await Dr. Zook's further researches to learn if in time the protests of the colonists were silenced by the transfer of the plantations to the proprietorship of London merchants. Difficulties with the Dutch on the west coast prevented the company from realizing net profits on its enterprise, and the entire nation was drawn into the Dutch war of 1665–67 in order to vindicate the trading privileges of the Company in Africa. The war was successful, but the Company had become too deeply involved to absorb its losses. Consequently in 1672 it was reorganized into the Royal African Company.

Dr. Zook's account of the negotiations with Holland over the African trade is detailed and circumstantial, as is his analysis of the financial history of the company and his account of West Indian complaints against the company's methods in handling the slave trade. He reports nothing that throws light upon the sources of the capital which sought investment in the company, and barely mentions the directing personalities. This is the more to be regretted as Dr. Zook has had a splendid opportunity to examine in detail the records of this company. The study of the development in England of wealth, apart from landed property, presents difficulties insuperable to any single investigator. But the problem may be put in the way of being solved if all workers in the economic history of the seventeenth and eighteenth centuries report their findings, however fragmentary or negative.

LELAND H. JENKS

CLARK COLLEGE

Free Trade, the Tariff, and Reciprocity. By F. W. TAUSSIG, PH.D., LITT. D. New York: The Macmillan Co., 1920. Pp. 219. $2.00.

This book is a collection of eleven articles on different phases of the tariff question, most of which originally appeared during the period 1904 to 1919 in the *Quarterly Journal of Economics*, the *Atlantic Monthly*, and other periodicals.

The papers are arranged in a logical and unified sequence, beginning with a discussion of the general doctrine of free trade and ending with a survey of post-war tariff problems. Each problem is handled with the author's characteristic open-mindedness. Each conclusion is reached after painstaking analysis, with a realization that future developments and changes in economic factors may take from an argument all its force.

In the first essay Professor Taussig discusses some of the old protectionist fallacies which have arisen in connection with dumping, protection to young industries, protection and wages, economic progress, and agricultural competition. The fourth essay has long been regarded as an authoritative contribution to the literature on the relation of wages and prices to international trade. The fifth paper enumerates the advantages and disadvantages of export bounties, special transportation rates for export business, special export prices, and other devices which often cause misunderstanding and international friction.

The tenth paper appeared early in 1916 and in it the author made certain recommendations with regard to the functions of the proposed Tariff Commission which was later established, with Professor Taussig as chairman.

Through the entire collection of writings the author holds to the basic free trade argument that tariff protection diverts the productive energies of the nation from industries which are self-supporting without subsidy to industries which need nursing at the expense of the consumer.

F. W. RYAN

UNIVERSITY OF CHICAGO

The Enclosures in England: An Economic Reconstruction. By HARRIET BRADLEY, PH.D. Studies in History, Economics, and Public Law, Columbia University. Vol. LXXV, No. 2. New York, 1918.

Some twenty years ago Professor Gay laid the foundations for a scientific study of the enclosure movement in England and since that time it has perhaps received more serious consideration from students of English economic history than has any other single subject. The importance of the enclosure movement amply justifies the attention which it has attracted, for it not only produced a striking change in the English method of land holding and land working but it also involved a degradation of the economic and social status of the English agricultural classes, the effect of which is all too apparent in the English countryside today.

Different aspects of the movement have appealed to different students. Some have concerned themselves with the origins, others with the methods by which it was accomplished, others with the effects upon the produce of the soil, still others with its social consequences. And judgments vary accordingly. You will get a very different opinion about it from a "spirited cultivator" like Mr. Prothero from the one you will get from an ardent social worker like Mr. Tawney. It was so even in the sixteenth century when Tusser, with an eye to the crops, sang its praises in bad verse, while Hales, regarding the dispossessed peasantry, denounced it in excellent prose. Relatively little has been written about the causes, for the very good reason that causes are hard things to locate with certainty. Dr. Gray, in his admirable study of English field systems, has made it clear enough that the open-field system

yielded early to enclosure in those parts of England where conditions of land tenure or methods of land working facilitated the change, as they did in the southeast and the southwest. It was slowest in coming in midland England where the Anglo-Saxon three-field system prevailed. But by the middle of the fifteenth century it was well under way even there, and it seems to have proceeded without interruption in that region for the next three centuries. It is with the causes of this inclosure movement in the midlands that Miss Bradley is chiefly concerned. She ignores the earlier movement in the southeast and southwest altogether, and she has little to say about the movement in the eighteenth and early nineteenth centuries. Her work is based entirely upon materials in print and mainly upon secondary accounts. The painstaking care with which scholars like Gay and Gray and Slater and Tawney worked through tedious manor rolls and manor surveys was not for her. Perhaps if it had been, she would have been a trifle less cocksure in her conclusions, and a little more respectful of the difficulties in the way of any sweeping generalizations.

Her position, briefly stated, is that enclosure was due to the fact that the older methods of land working had exhausted the soil. It is not likely that anyone will quarrel with her about that. No one will deny, and so far as I know nobody has denied, that soil exhaustion had a good deal to do with the conversion of open arable land into inclosed pasture land in the sixteenth century. But to assume, as Miss Bradley seems to assume, that soil exhaustion was the only factor in producing the change is to assume too much. She may be right in her contention that the increase in the price of wool relative to the price of corn, which has sometimes been urged as the incentive for sixteenth-century inclosures, did not occur, though she places altogether too much dependence upon Thorold Rogers' meager and scattered statistics. But she loses sight of the fact that it was not so much the price of wool as the net profits obtainable from woolgrowing that made it attractive. This was a matter not altogether dependent upon soil barrenness or soil fertility. A cultivator even of virgin soil might have found woolgrowing more profitable than agriculture because wool was much easier to store, much easier to transport, and probably much easier to market than corn. It is important to remember in this connection that the wool trade was the best organized trade in fifteenth-century England. From the point of view also of farm management there was much to be said for woolgrowing on a large scale, as opposed to small-scale tenant farming with

its reluctant workers and its miserable customary rents. Considerations like these Miss Bradley ignores altogether, yet to the new type of landlord who was finding his way from the cities into the country at the beginning of the sixteenth century they must have carried a great deal of weight, leaving out of account the added incentive of soil exhaustion. The fact is that even if we decide that the enclosure movement was in its essence a movement to adapt the soil to the uses for which it was best suited, we still must allow that the chemical elements which determine the best usefulness of the soil are intricately compounded with social elements which cannot be resolved by the reagents of the soil analyst.

Now and then Miss Bradley speaks as though she were the first to point out the bearing of soil exhaustion upon the conversion of arable to pasture land. As a matter of fact, of course, the idea is a perfectly familiar one and Miss Bradley's position is only remarkable because of the excessive emphasis which she lays upon it. Indeed, she is so taken by the importance of soil exhaustion that she even undertakes to apply it to the solution of that difficult problem in the agrarian history of fourteenth-century England, the commutation of villein services. In this connection she points out that in the commutation of services for money rents the tenant got the better end of the bargain. That may perhaps be accepted. It has generally been explained by the fact that the tenant was in a position to dictate the terms. Miss Bradley maintains that it was because the barrenness of the soil was such that he could no longer pay as much as formerly. According to her analysis it was his increased poverty rather than his increased prosperity which secured for him a reduction of rents. And she is brave enough to challenge the position of the great Vinogradoff himself upon the point. She had need to be well furnished for a passage of arms with him. But her armor is thin. She proves what needed no further proof, that tenants were giving up their holdings and were even running away from them in the fourteenth century. She proves also that they themselves sometimes attributed this to their inability to meet their rents, and that the landlords often advanced motives of charity for rent reductions. But she ought not to have forgotten that poverty has been the commonest excuse in history for not doing distasteful things and that motives of charity were currently used in the Middle Ages to justify every deed that was dark and every trick that was queer. Miss Bradley must find better support for her position than these threadbare formulas before she can induce serious students to abandon the old standards.

Nevertheless, although it appears that she has pressed her point too far, it must be conceded that not enough attention has hitherto been paid to the importance of soil exhaustion as a factor in agrarian changes in England. Miss Bradley has rendered a service in calling attention to it.

CONYERS READ

UNIVERSITY OF CHICAGO